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COLLEGE COURSES IN HOME ECONOMICS.[1]

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Inasmuch as courses in Home Economics have been introduced into many of the agricultural colleges, the Association of American Agricultural Colleges and Experiment Stations has desired to have one of its standing committees, of which I happen to be a member, consider what should be included in such courses. The committee has therefore made somewhat of a study of this matter and I have looked into what these colleges are doing in different parts of the country. I have also considered the matter in the light of experience gained from studying college courses in agriculture and other subjects. In making such studies it has been my practice after a time to put my conclusions in the form of a tentative program and to set forth reasons for this program. I do this because it gives me a definite basis for further study and if I have an opportunity to present my scheme to others it affords something definite to discuss and criticise. I am glad therefore to have the opportunity to present this matter here and shall be only too glad to have my views frankly criticised, especially by those who are actually engaged in giving college courses in this subject.

The reaching of definite conclusions on this matter is obviously rendered more difficult because of the chaotic condition of the college curriculum in general. Many efforts have been made to establish

[1] Read at the Boston Meeting of the American Home Economics Association, January, 1910.

standard entrance requirements for colleges and it is generally supposed that great advance has been made in this matter by a substantial agreement on from 14 to 16 "units," representing an average four-year high school course, super-imposed on eight years in elementary grades. The great broadening of the high school curriculum in recent years, including the introduction of the so-called vocational subjects, has, however, brought in a factor which in the end is bound to affect radically the details of college entrance requirements.

It now looks as if in the end college entrance requirements must in some way be made to represent a certain amount of mental maturity and training rather than knowledge of particular subjects. Moreover, changes in pedagogical ideas are modifying our judgment as to the order in which different subjects should be taught. In my childhood everybody began with the alphabet when he learned to read. In my boyhood it was the universal practice to begin the study of Latin or Greek with the grammar. It used to be generally thought that the study of the ancient languages should precede that of the modern languages, but there are many now who insist that it should be vice-versa. In science it was long thought necessary to begin with more or less abstract elements and definitions and from these work up to the actual things. Nowadays many believe that the subject should first be presented in some concrete form and analyzed afterward.

On this theory the vocational subjects have a great advantage. The student's interest may easily be aroused in a steam engine, cooking, gardening, stock-judging, etc. Then he may be led to study the principles underlying these things.

From this it easily follows that it is not necessary to insist that the student shall have preliminary training in the fundamental sciences, e. g., chemistry, physics, or botany before he begins to make a systematic study of agriculture or Home Economics. By a careful selection of topics it is possible to give the student proper instruction in the simpler features of these subjects as a preliminary to their more scientific study. And this preliminary work may be the best preparation for the study of chemistry, physics or botany, because the student will naturally be interested in the sciences as subjects vitally connected with the real things of life.

Are we now prepared to take a further step and hold that it is not wise to insist that certain subjects, including agriculture and Home Economics, shall always be begun in the preparatory school?

When the college curriculum was narrow it was easy to insist that certain subjects should always be taken in the preparatory school. This idea was broken down when sciences and modern languages came to be regular high school studies. Colleges still admit students without either and give them beginning courses in colleges. Many scientific college professors indeed prefer that no science be taught in high school. Classical teachers will ultimately have to let students begin Greek or Latin in college. Teachers of vocational subjects may have to do the same thing and shop work, sewing, cooking, farm practice, etc., may be taught in college.

The college course then will differ from the secondary course not in the fact that the subject is begun in the former and continued in the latter, but rather in the adaptation of the college course to the greater maturity and broader general knowledge of the college student. If the subject, whether Latin, physics, agriculture or Home Economics, has been studied in the high school, that student should not be required to begin at the beginning in the college. But if he has not had the subject at all in the high school he should not be deprived of the opportunity to begin it in the college. And if it is a vocational subject, he should not be deprived of the opportunity to get the practice of the art in college because he has not had it in the high school.

This means that at least two courses in each vocational subject should be offered the freshman—a beginning course or an advanced course.

To these reasons may be added a prudential one. At the present time such subjects as agriculture and Home Economics are taught in relatively few high schools and the number of college students pursuing them is small. It is well therefore for the college to encourage more students to take such courses by meeting their actual needs for beginning courses.

By this I do not mean that the college shall give high school courses in these subjects. The college class in cooking or sewing or gardening should cover more ground and do things more thoroughly and intelligently than a high school class and the way should more distinctly be prepared for the scientific training which is to follow, just as a freshman class beginning physics or chemistry should in the same time do more and better work than a high school class in the same subject. Certainly in many of the states it would be unwise to insist now that only advanced courses in Home Economics are to be given in the colleges.

Obviously it is absurd for a college to send out graduates in Home Economics who cannot cook a meal or make a dress, or in agriculture who cannot milk a cow or run a plow. This is just as absurd as for the college to turn out graduates in Home Economics who know nothing but cooking and sewing or in agriculture who know nothing but ordinary farm practice. What kind of musical instruction would that be which did not include practice on any musical instrument, or art education which included no practice in drawing, painting or sculpture? Vocational education will not amount to much pedagogically or practically if we minimize the importance of good practice and overestimate the advantages of good theoretical training. The doing and the knowing should go hand in hand all the time and never be divorced.

It is the complex character of such subjects as Home Economics and agriculture that gives them their very high pedagogical character when properly taught.

Instruction in the Latin language had its highest pedagogical value when there was combined methodical and scientific grammatical drill, both analytical and synthetical; translation both ways in large amounts and variety; acquisition of knowledge of the ancient ideas that they might be applied to the life of the times; and the acquisition of a language which was yet the living tongue of the law courts, the churches and all international communications. Only a remnant of such pedagogical value remains in Latin as ordinarily taught in our schools today. We shall never again have such classical scholars as Milton and Macauley. The impulse and the necessity for such kind of learning have departed forever.

The important question is—Can we transfer to the sciences and the vocations the thorough mental discipline and broad practical training once conveyed to a few select minds through the ancient classics and make these newer studies the media for the best mental development of great masses of students? The great problem of the modern college is to make genuine and thorough scholars in whatever subject is pursued, and above all in those subjects which come closest to the actual life of modern men and women.

To do this in Home Economics or in agriculture it is necessary to consider the subject in its broad relations both to science and to practice. There should be careful and methodical training in details of practice, keen and accurate analysis and synthesis on the basis of scientific knowledge of the whys and wherefores, the use of knowledge

(as acquired) in varied combinations for practical ends, and the pursuit of new knowledge which may be applied to the improvement of the art and the welfare of mankind. It is these principles which are to be worked out in college courses in Home Economics, and it is this broad scope and purpose which should distinguish them from the narrow routine of the more elementary work in the lower schools.

To construct courses on this basis it seems fair to claim that in some way every graduate from a college course in Home Economics should have a fair working knowledge of the household arts, and that if she can not get this in the secondary school, she be allowed to get it in the college.

To illustrate my present view of this matter I have drawn up the following outline of two college courses in Home Economics, based on those given in two American colleges:

(Both to be offered in the same college.)

MINOR COURSE.

(1) Plain sewing and garment making.
(2) Cooking.
(3) Selection and preparation of foods.
(4) Economic uses of foods.
(5) Home architecture and sanitation.
(6) Textiles.
(7) Home decoration.
(8) Household management.
(9) Advanced cooking
Dressmaking and millinery } At least one of this group.
Art needlework
(10) Food and nutrition
Dietetics } At least one of this group.
Household art

MAJOR COURSE.

(1) and (2) to be taken in preparatory school and credit given in college entrance requirements.

Required Studies.—(3), (4), (5), (6), (7), (8), (9) (one of group), (10) (one of group).

Electives.—At least one additional course from 9 or 10 or from other electives in Home Economics offered in the college.

COLLEGE COURSES IN ECONOMICS APPLIED TO THE SCHOOL OF HOUSEHOLD ECONOMICS.[1]

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The question of Household Economics deals not only with the scientific but also with the economic things of household life. It includes the study of the most economical way in which the household may be conducted, but in addition concerns itself vitally with the processes of manufacture, of production and of distribution of those articles which are to be consumed in the home. The escape of the processes of production from the home has forced women to seek a knowledge of the quality and cost of production of those articles which were formerly manufactured in the home and which are now made in shops and in factories, or in larger quantities within the home, with the idea of distribution to other places in exchange for goods.

In Simmons College during the past year or two we have attempted to give some special line of work to individual students which would cover a part of this field, but I have failed to discover that any form in which such work might be presented as a specific college course has been developed. However, this year we have introduced the plan of having the seniors devote one-fifth or two-fifths of their time to some special study, as an elective, which shall give training in the investigations of subjects closely related to the scientific work of the student. Such work follows the economics of consumption, of production, and of distribution, considering these terms as applied to those matters which deal with the household and not in their application to the general field of manufacture and commerce.

In time these fields might be divided into specific courses and offered as electives or given as required work. Permit me to suggest, tentatively, five groups which are possible.

(1) *Municipal housekeeping.*—This subject should consider the laws of the state which regulate the conditions of the home or the city

[1]Read at the Boston Meeting of the American Home Economics Association.

and of food supplies. It would thus require a study from the historical point of view of the growth of legislation along these lines and the development of the scientific side of municipal housekeeping, together with a training in ability to discover comparative costs and efficiency of such service—that is, training in statistical and economic research.

(2) *Independent business enterprise.*—The production and sale of food supplies and of clothing offers another field for intensive training. Investigation should develop executive or administrative power which would be of the highest value, building as it would do upon the scientific training gained in the earlier years of the course. This study should follow the line of the regulations imposed by law upon such production and distribution and the experience of those who have carried on such enterprises, thus reaching out for the best methods and the most economical means, and studying the markets for buying and for selling.

(3) *Production in the home of foods or of art materials, including the making of articles from textiles and the manufacturing of food supplies.*—Intensive study should inquire into the methods of disposal of the product, of means of securing raw materials and the actual cost of production in comparison with the price for selling. As an illustration, at this moment the question of the making of bread is under discussion and requires investigation of bake shops on the one hand and experimentation in manufacture in the home, on the other, to discover whether the manufacture of bread either for home consumption or in the home for distribution outside of the home is more or less economical than securing bread from public bake shops. This must also include the study of the comparative nutritive values.

(4.) *Household furnishing.*—Much has been done in the study of the sources of supply and of the methods of manufacture of household furnishings by the manufacturer, but little is known of the comparative wearing values of household supplies and the most economical methods of renovating household furnishings. The ability to supply the public with artistic furnishings and those which will be durable at a cost which is possible to the individual of moderate income, is at present before the American people largely in connection with the study of the tariff question. Such a study should include here as elsewhere an investigation of the opportunities for independent work by women in interior decoration and furnishing.

(5) *Domestic service.*—One of the most serious problems before

the modern housekeeper is the question of service in the home. The development of production outside of the home, from the point of view of economy, has tended to leave the unskilled processes to the woman in the home. Thus if it is true that the manufacture of bread outside of the home is more economical than in the home, or that the manufacture of clothing in shops is more economical than in the home, the American woman cannot afford to carry on such production in the home. Knowledge on her part of how to secure service which shall afford to her an adequate return for her outlay in wages is therefore necessary. This is tied up as are most of these other subjects with the understanding of the work of the people.

At present the five senior students in Simmon's College who are carrying on investigations are working upon the following subjects: (1) The production of bread, one from the economic and one from the scientific point of view; (2) the opportunities for women in interior furnishing together with the methods of conducting such a business; (3) a survey of the methods and results of serving school lunches in the public schools of Massachusetts; and (4) the laws regulating employment agencies, the best methods of conducting such agencies, and the general question of domestic service.

In conducting these studies three considerations are kept in mind. (1) Whatever work is done shall connect itself closely with the technical and scientific work of the department of Household Economics. (2) It shall give to the student training which looks toward immediate professional occupation. (3) It shall contribute to our knowledge of the opportunity for women in these lines, and shall thus aid the college in understanding the opportunities for training which may be offered; or it shall contribute to the acquisition of knowledge which is desired for the conducting of the work in the school of Household Economics; or it shall contribute to a knowledge of situations which shall be of practical value in connection with legislation and administration in our commonwealth.

This is but a beginning of what we hope will grow into a series of original studies in seminars, each devoted to some one important subject. Out of these should develop some fundamental courses, to be given to all students in the Household Economics School.

THE RELATION OF PHYSICS TO HOME ECONOMICS COURSES.[1]

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[*Introduction by Mrs. Richards.*—Some of us who are engaged in chemistry believe that chemistry is the foundation of everything, but the physicists believe that they have the foundation. Now, we know the most important thing is the application of heat. If you remember one of the earliest investigations which Mrs. Abel and I undertook under the Elizabeth Thompson foundation and under a foundation to which Mr. Carnegie and Mr. Phipps contributed, our report to the American Association in 1890 was entitled the Application of Heat to Food Materials, and at that time we had very little to go upon. There was very little in the literature, very little experimentation on the effect of heat in its various applications to food. Mr. Atkinson, as you know, suggested that we were most wasteful of fuel in our kitchen stoves and he tried to utilize the light of the lamp for the cooking of the breakfast. It was a truly scientific instrument, but woman was not equal to a scientific instrument and the Aladdin Oven failed in its purpose. The Aladdin Oven was originally evolved from the Norwegian cooking box, and its modern representative is the fireless cooker. The fireless cooker has certain merits; and the Aladdin Oven had many merits which are not appreciated today, though naturally it had some demerits. Now in ordinary climates we are obliged to use fuel, and we all find fuel very expensive. In very many ways the applications of the scientific problems of heat are becoming more and more important to us; and we have great pleasure today in having with us Professor Norton, who worked with Mr. Atkinson. He has many very interesting things to tell us and will, I am sure, give us a great many props on which we can build our future work.]

[1] Read at the Boston Meeting of the American Home Economics Association January, 1910.

Before discussing the relation of physics to Home Economics or to instruction in that subject, it is perhaps well to call to mind just what we ordinarily mean by the term physics. Our senses bear evidence of the existence about us of numerous bodies which have various properties in common, such as weight, density and elasticity, and these properties we attribute to the matter which these bodies contain. We believe this matter to be an inert thing and the mutual motions and effects of the bodies we believe to be due to an active agent or force, which we call energy, and stated in its simplest terms, physics is that branch of science which deals with matter and energy. Putting it this way, there seems some justification for the comment of a student, who said he judged physics to be "the science of everything and what happened to it." The term energy is somewhat difficult to define with precision but Holman's definition that "energy is anything which can produce or change the rate of motion in a body," will indicate to you at least what sort of a thing energy is. It is familiar to us all as the means supplied to us by the sun, by fuels or by bodies of water in an elevated position and which are used as sources of power in many operations of commerce and in the arts.

So long as we concern ourselves with the substances or bodies about us and their mutual changes and position, color, density or elasticity, etc., we are working in the realm of physics. On the other hand, if we seek to determine the composition of the matter of which bodies are composed, or to effect the decomposition or recombination of the separate substances, we come into the domain of chemistry. Of late there is a growing tendency to set off from physics such portions of that science as are concerned with large quantities of matter or with the transformation of large quantities of energy. This branch of physics deals with larger machines, heavier apparatus and oftentimes, commercially important problems and is usually classed as engineering. It is not possible to draw a sharp line of division between physics and chemistry and in fact we are today building up a great branch of science known as physical chemistry, and another known as chemical engineering, and it is not possible either to draw any sharp line of demarcation between the physics of electricity and electrical engineering.

The common subdivision of physics usually found in courses of instruction in our schools and colleges separates the subject into five topics: Mechanics, light, sound, electricity and heat. Beginning with the one which has the least direct bearing on the subject of Home

Economics, we should come first to the subject of sound or acoustics. I think were it not for our universal love of music and for the tremendous utility of the telephone, the study of acoustics as applied to Home Economics and to other kindred practical subjects would be considered of even less importance than appears to be the case today; yet it ought not to be neglected. The sound-proofing of our dwellings and the provision of satisfactory acoustic properties for our places of meeting as well as the prevention of noise in our cities, all call attention of the importance of further study of this branch of physics.

Under the subject of light we have many household prolems, but the fact which confronts us most clearly is the very great increase in efficiency of the work done by an ordinary operative in the mill or a worker in the household when provided with adequate and proper light. Aside from the matter of efficiency and speed in working is the question of the comfort and well-being of the worker.

The development of the lighting of our dwellings has been steady and rapid from the time when the window openings were closed with semi-transparent membranes of paper through the days of clear glass to the present, when we may by the use of diffusing glasses or prisms redistribute the light in our houses almost at will. The proper distribution of light throughout our rooms either in dwellings, schoolhouses or mills by means of diffusing glass in the windows or properly located artificial lights with ceilings and walls of proper tint and texture is a subject which may well have the attention of every student in Home Economics. The development from oil lamp to gas burner and to electric lamp of carbon or later of tungsten has been tremendously rapid and has given us agents for home economy of which our grandfathers never dreamed.

The relation of electricity to household economy is so close and is changing so rapidly that it is impossible in the time at my disposal to more than suggest its nature. The certainty of supplying energy, be it heat or mechanical energy, or of furnishing light or other active agents by electrical means at exactly the desired rate for the best and most economical length of time and with the minimum of discomfort, noise, dirt, and so on, has led to its rapidly increasing use. It is unnecessary to more than suggest what a useful agent this is becoming in lighting, cooking, sterilizing, cleaning, etc., to make apparent the importance of its bearing upon our everyday means and methods of living. It is utterly impossible to predict how nearly universal its use is to become in the near future.

The fourth subdivision of physics, called mechanics, is perhaps an older branch of the science and deals more with those things which have become the chief concern of the mechanic or workman on the one hand and of the mechanical engineer on the other. However, a proper understanding of the principles of mechanics is necessary for the consideration of the other branches of physics. The increasing use of new materials for buildings leads to a discussion of their physical properties and the mechanical properties especially need much attention for the determination of their fitness in the construction of our dwellings. I might instance the substance, concrete, which is becoming a very live factor in our modern construction, and to my mind, a very desirable one.

But it is to the fifth division of physics, namely, heat, to which I should ascribe the greatest importance in its bearing upon the subject of Home Economics, and I wish to quote to you what one of the foremost writers upon general physics has said upon the subject of heat:

> There is, perhaps, no scientific inquiry more full of human interest, than the study of the nature of heat, and the manner in which matter in general is affected by it. No branch of physical science is so intimately connected with the everyday occupations of life, and, consequently, none of them interests mankind more closely.
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> The influence of heat is manifestly so universal, and its actions so important and necessary to the progress of all the operations of nature, that, to those who first considered it with some attention, it must have at once appeared to be the general principle of all life and activity on this globe. With its return in springtime the bud breaks into blossom, and new life animates the vegetable kingdom. By its agency the incubation of the egg progresses, a living thing is brought into the world, and heat is still necessary to its support. Finally, to the power which man has acquired over it is due that supernatural strength which has made him superior to all other animals, and master of land and sea.

We live in very narrow limits of temperature and while the known range of temperature is from $-$ 400° to nearly $+$ 4000° (Fahrenheit), we cannot ourselves withstand variations in temperature greater than about 150° F. and then for only a short time. The variation in temperature of our own bodies, amounting to only a very few degrees, results in the cessation of life. The study of heat and temperature and the means of their control would seem therefore to form an important part in courses relating to instructions in methods of living. Perhaps I might point out to advantage two phases of our domestic economy where our ignorance or neglect concerning matters of heat causes great economic loss. In the matter of cooking we are confronted directly with the problems of heat, usually the acquiring and main-

taining of a proper temperature over a relatively short period of time. We wish, for instance, to heat a limited amount of food up to a certain temperature, say 200°, and keep it there for an hour or two. Ordinarily we do this in a monstrous thing known as a cooking stove made of cast iron, and if the examples with which I have had personal experience are typical, they are well calculated to heat our kitchens and to send much heat up the chimney, but are singularly inefficient in the matter of making use of the energy in coal for cooking. My own cooking stove is capable of using up coal enough to supply 700,000 British thermal units in one day. I am unable to state after long experimenting just what percentage of the heat can be utilized in cooking but something like 0.1 per cent is the probable amount.

It was a realization of this sort of thing that led my very good friend, Edward Atkinson, to spend much time and energy upon his Aladdin Oven. The fireless cookers which have followed it are not open to criticism on the ground of efficiency in utilizing heat but are somewhat limited because of the restricted temperature range in which they operate. I look for an electrically heated jacketed oven in which by supplying electricity we may heat our food at exactly the desired temperature over a very wide range for any desired length of time with absolute certainty that no sensible portion of the heat is lost. In some of the present cooking devices there is enough heat supplied in baking a loaf of bread to keep that loaf of bread hot for three months could the heat be wholly concentrated upon the bread and the pan in which it was cooked.

The second of the points which I desire to raise in connection with heat in our Home Economics work relates to the construction of our buildings as regards their warmth and their ability to withstand fire. The first consideration becomes a discussion of the physical properties of the materials of building, first as concerns their insulating value or non-conducting properties, and second their rates of expansion and contraction and hence their liability to produce cracks or fissures with changes in temperature. We give to the fire resistance of our dwellings, both as a subject of instruction and of daily concern, altogether too little attention. It is a matter of the greatest reproach to the community at large that it allows in this country an annual fire loss so great that when it is added to the excess cost of our water departments necessary because of the fire danger and to the cost of our fire departments themselves it presents a total of something like $300,000,000 annually. This great loss and its probable increase from

time to time by great conflagrations becomes a grave source of danger. It is not a matter of insurance, since the real economic loss is here whether there be insurance or not. It may sometime become, as Mr. Atkinson believed, a matter of insurance engineering, but at present I believe it is a matter of study, first, of the physical properties of materials, and second, of the proper administration of our households, mills and schools.

In teaching the subject of physics I have become thoroughly impressed with the belief that instruction by means of experimental lectures accompanied by laboratory work is much the most efficient system. For the same expenditure of time I think this sort of instruction yields better returns than the recitations, even though these be accompanied by some laboratory instruction. I have had opportunity during the last few years to note the effect upon students, when in larger or smaller laboratory sections, of various courses of engineering resulting from the instruction given them in heat, and I believe the efficiency of the instruction where sections in the laboratory can be kept down to 10 or 12 men is enormously better than when those sections are two or three times as large. I realize that much has been written and said on this subject but I cannot forego the opportunity to express my strong conviction that laboratory instruction in physics is relatively singularly effective when taught to students in small groups.

Perhaps a word as to the cultural value of physics might not be out of place here. It has not always been customary to class such sciences as physics and chemistry as subjects which make for a general cultural development of the student, but it seems to me more and more apparent that physics properly taught, with care to avoid details and to concern one's self with the principles and phenomena of heat, light, sound, mechanics and electricity, has very great value as a cultural subject.

THE RELATION BETWEEN COLLEGE AND UNIVERSITY DEPARTMENTS OF HOME ECONOMICS AND THE OUTSIDE COMMUNITY.[1]

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A discussion of the relation of departments of Home Economics in colleges and universities to outside communities opens up for consideration the whole topic of extension teaching. If I were to search for some time for an opinion of a high authority on which to base the central thought of this paper, I probably could not find more applicable material than that contained in a recent address by President Lowell. He is quoted as saying last week:

> A university, to be of any great value, must grow out of the community in which it lives, and must be in absolute touch with the community, doing all the good it can and doing what the community needs. Any institution which is not in absolutely close touch with the community about it, which attempts to be exotic, which attempts to live in the air without contact with the ground, is doomed to wither and die.
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> The institutions about us today that are doing the most in the way of helping their respective communities, are the great state universities of the middle west and we have an enormous amount to learn from them. We have to learn to do those things which they are doing, and we all realize how much more difficult it is to do that in the midst of an urban population with diversified industries than it is in a rural community with agriculture as the principal industry. It is as easy as can be to entertain the public. It is an extremely difficult thing to instruct it.

Again, the gist of Ex-President Eliot's speech at the inauguration of President Nichols of Dartmouth a short time ago, was a strong plea for vocational education. He said, not to quote exactly, that our subjects taught, our courses of study, our methods today, were all the methods of four hundred years ago, and that it was time to break away from tradition and change our educational system into one suited to the needs of the twentieth century.

[1] Read at the Boston Meeting of the American Home Economics Association, January, 1910.

And again, if I were to think long and work hard in an effort to describe what is meant by real, true, dignified extension work, I could not begin to picture it as well as it is already portrayed in an old, but nevertheless valuable, book treating this subject. To quote several passages taken somewhat at random, we find the purposes of extension teaching set forth as follows:

> It has a message for men and women alike; for the educated as well as for the uneducated; for the rich no less than for the poor. It seems likely to prove one of the great organizing and initiating forces so necessary and as yet unfortunately so rare in the educational and social life of the United States.
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> University extension is a widening of the doors of the college and university so as to take in classes of people who are not now directly benefited by the higher institutions of learning; it brings to busy people at their homes the opportunity of securing university aid and direction in carrying on their studies while engaged in the round of daily toil; it renders possible a much better utilization of existing educational facilities.
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> If university extension did nothing more than this; if it simply made the higher learning possible to those who are thirsting for it, who for any reason have not been able to share it in their youth or have fallen out of contact with it in their advancing age, it would still be a movement in which every thoughtful student of human progress would be interested. But it means vastly more than this. It begets and feeds an interest in higher things, which but for it would never be awakened. It stirs many a mind from a weak and slothful intellectual lethargy into a new and strong activity, with all the countless and widening circles of influence which such an awakening on the part of even one mind begets. It puts new and worthy objects of thought into the lives of people who have been content to live on in intellectual sloth and barrenness. It turns the current of thought and discussion in whole communities from the every-day gossip and tittle-tattle of small social cliques and circles into the great and broad stream of human history and science.
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> University extension, then, whether we look at it merely as a widening of the opportunities of our existing institutions, or as a means of satisfying the intellectual wants of hungering souls; whether we scrutinize it simply from an administrative and financial point of view as a device for rendering more serviceable our educational plants; whether we regard it merely as a powerful agency in stimulating to intellectual effort the minds of thousands of people who without it would have gone through life as in a dream, or as a means of purifying and elevating the tone of our social life in city, village and country, or as a movement with an educational mission to stir and arouse everyone to the importance to himself and the community of systematic education along higher lines, and his consequent duty not only to pursue a systematic process of self-culture, but also to urge it upon his friends; whether we consider it as a most efficient means of enlisting the sympathy and support of the community in educational matters as a whole, or as a device to get public and private support for our higher educational institutions, or finally as a great movement in the direction of social reform, which promises to be a most powerful ally of those tendencies to a higher social life in whose growth we all take so much interest—whether it is regarded from one or all of these points of view, university

extension must present itself to the thoughtful American citizen as a force which it is his duty, as it should be his delight, to conserve and increase in every possible way.

University and college extension (I use the words interchangeably in this paper) is not new.

More than a thousand years ago it occurred to the mind of a great conqueror that learning was not after all to be the exclusive property of the monks, that if it was well for the church that learning should flourish in its cloisters, it might be well for the state that it should be cultivated by the people. He saw that the influence of the priesthood came as much from their superior knowledge as from the sanctity of their office, and determined that such a factor in civilization should not be restricted to the few. This underlying principle of extension work was in the mind of Charlemagne when he invited Alcuin from England to assist in establishing schools throughout the realm. The results of their joint work helped to prepare the way for the great University of Paris, which drew thousands of students from all parts of Europe.

Every one will agree with the soundness and timeliness of the words given at the beginning of this paper, from Harvard's new President. I may be wrong, but personally I cannot conceive that institutions like Harvard, Yale, Dartmouth, Brown, Amherst, Bowdoin, and others of that class, supported by private endowments, and neither asking nor receiving financial aid from state or nation, are under any obligation whatever to carry out any forms of extension work. To be sure, their future prosperity and usefulness may depend to a great extent on how closely they keep in touch with the live problems of humanity, and so they may seek, and legitimately too, to keep alive by offering and doing this extension teaching. If they choose to be unselfish and open up their doors so that many besides those enrolled may receive the benefits to be derived from their great laboratories and their learned men, so much the better for them.

On the other hand a large number of active, virile institutions, state universities and agricultural colleges in this land, depend entirely for their financial support on acts of legislation passed by Congress and the different state legislatures. And they have a clearly defined duty towards those who perhaps never even see the outside of the college buildings, yet continually pay their share of taxes for their support.

Professor Bailey in his book, The College and the State, says:

These colleges of agriculture are forcing a new definition of education. The institution does not passively accept all students who come. All persons in the commonwealth are properly students of a state educational institution, but very

few of them yet have registered, nor is it necessary that any great proportion of them should leave home in order to receive some of the benefits of the institution. It is the obligation of such an institution to serve all the people, and it is equally the obligation of all the people to make the institution such that it can exercise its proper functions; and all this can be brought about without sacrificing any worthy standards of education.

It was clearly in the intent of the Morrill Land Grant Act, passed by the Congress of 1862, and was implied in the phrase which reads: "to teach such branches as are related to agriculture and the mechanic arts, in such manner as the legislatures of the states may respectively prescribe, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life," that such a subject as Home Economics should be included. About thirty years after the passing of the act establishing colleges for teaching, the Hatch Act for conducting experimental work went into effect.

Until recently the work of state institutions has been divided between these two agencies. Calls from outside for help came so fast that both the class work of the professors and the research work of the investigators were seriously interfered with. Coupled with this came a realization of the necessity of keeping in touch with real things, and that the college owed something to the ninety-nine per cent of the population who could not come to it for instruction, as well as to the one per cent who were fortunate enough to be able to obtain a college education. Within the last ten years about twenty of the leading state universities and agricultural colleges have established departments of extension work. The Association of American Agricultural Colleges and Experiment Stations, at its meeting last August, recognized this form of teaching as coördinate and on the same plane with college instruction and research work, and organized it as a third section. A bill has been recently introduced into Congress recommending a Federal appropriation to each state to be used in opening the doors of schools and colleges to all classes not yet directly benefited by these institutions.

If an attempt is to be made to carry education to all the people, this education must be sound, well directed, and must have some meaning to them. Extension work has savored too much of exploitation in the past. The time has gone by when extension work is done for advertising purposes. It is serious work, carried out with a definite purpose in view. It will no longer be effective when carried on with a patronizing spirit. Those who receive instruction through extension

courses have a right to feel just as much dignity in their study as though they were pursuing the same subjects within college halls.

Such, in brief, is the history of the rise of the extension idea and the status of the work in this country at the present time.

There does not seem to me to be any question as to the place Home Economics, taken in its broadest sense, shall occupy in our educational system. Manifestly it should be on a par with any other science or group of subjects. I have never been told, neither have I found a logical reason why the great women's colleges should practically ignore it. In state universities and colleges of agriculture and mechanic arts, it is now taking the place it should take—that is, one of the chief divisions. Several splendid institutions teaching the subjects which comprise Home Economics are affiliated with some of the leading educational institutions of the east. You teachers of Home Economics aim at the root of our civilization—the home. A recent writer on sociology says:

> The home which is charged with the task of bringing new individuals into the world, socializing them, and furnishing them with their ideas of brotherhood and service, is by far the most important institution of society, church and state sinking into significance when compared with it.

To say the least, Home Economics has been a most neglected subject and it is to be hoped that from now on the opportunity will be given you, who are really the deans of this movement, to expand your work through the schools, colleges, universities, and the agencies through which extension teaching may be carried on, as has been, and is being given in a larger way than ever before, to other lines of educational work.

There is one field in which you have an unique opportunity. I tried to show at the October meeting, held in this place, that there was need of your turning your attention to country life and rural problems. No doubt there are three sets of problems presented to you, all of which need attention, viz., the problem of home life in the congested city; that of the suburban town; and that of the rural community, including the small village. While these may appear to be distinct, I am inclined to believe that they are not distinct from the sociological standpoint, but only in the kind of work which you can carry out, and the manner in which you approach the different conditions. In fact we hear too much about there being a "rural problem" and a "city problem." It seems to me they are practically one. The city continually looks to the country for new life and vigor to keep up its population

and industrial progress. The country constantly looks to the city for amusement, school advantages, and opportunity for trade. The fact that the two are so interdependent makes it absolutely necessary that the home life, the schools, the churches, and all the institutions in either be governed and directed by much the same influences, else there must be great readjustment as the population shifts from country to city or city to country.

I am not very clear in my own mind as to what the relation of departments in colleges and universities to the city community can be. Surely the same advantages for extension teaching are not offered as in either the suburban town or the rural community. Home Economics can be taught in the schools, and there is evidently need of this, for several of our New England cities range above seventy-five per cent foreign born or of foreign parentage, and these children usually have entirely different home influences than our native born children. Through women's clubs, church clubs, Young Women's Christian Associations, night schools, and by itinerant lectures both at the college or university if situated in the city, and in school buildings and churches, much work could be carried on; and yet it does not seem to me that the life of the average city lends itself very readily to this kind of work.

With the suburban town the case is different. A more wholesome home life is maintained. Usually suburban towns are alive with progressive ideas and spirit. It is not so hard to interest parents, teachers, and others in their home problems, as in the city; and there is opportunity for transferring much of the college and university teaching right into the heart of the communities through coöperating with the agencies already named, and the organization of classes for further study.

The greatest field of usefulness now open for the departments of Home Economics in colleges is that offered by our rural communities. Too much of the sociological study of the past has been devoted to urban conditions. To quote Professor Bailey again: He says:

> One of the great needs of the time in social studies is that we discover the rural community.
>
> The country must not be exploited for the city, but must be developed for itself and out of itself.
>
> There must be a country social order as there is a city social order.
>
> One might think from many current discussions that the country exists for the convenience and benefit of the city, providing occupation for those who have failed to attach themselves in cities, and an asylum for the undesirables.

James J. Hill is urging maximum crop production to the acre as one of the vital rural problems, else starvation faces future generations in this country. But is this all? Must not our land produce a civilization as well; or, as President Butterfield of the Massachusetts Agricultural College in his Chapters on Rural Progress says:

> The farmer's interest in the political, social, and economic problems of his calling is fully as great as in those purely technical and scientific.

The argument has always been made that a woman's life on the farm was one of drudgery, that the isolation led to much insanity, and that there was no chance for social opportunity. Yet the women of the country have just as great resources as do the city women. The grange and farmers' institute movements have caused women to find themselves. They have brought culture, and given the wife a chance to take her place beside her husband. While the average women's club does not reach farm women, yet in many places the organization of town and country clubs, and rest rooms where women from the small city, village and country may meet and have social intercourse, has done much to bring about changed conditions. If farm life for women is drudgery, and if there is not at present opportunity for social privileges, then here is a chance for the Home Economics departments in colleges and universities to correct conditions which need changing badly.

There are many other ways in which a department of Home Economics can help rural communities. The grange, which has already been spoken of, offers a medium for lecture work and the organization of classes for study. The rural school buildings, idle about half of the time, could be used as a meeting place for rural school teachers and mothers, to gather and discuss with a trained home economist problems of home making. It has seemed to me for a long time that the most elementary discussion of the school luncheon by a teacher, with perhaps a one-burner oil stove for the preparation of tasty dishes, would be one of the best things that could be introduced into a rural school, and also one much needed.

The village church, used only a part of one day a week, could be utilized in a similar way. School teachers might be given some simple lessons in cooking, sewing, and other household problems, and they in turn could repeat these to their pupils.

The Home Economics department of a college might initiate a movement to have the village library well supplied with books treating of

these subjects. Every farmers' institute should have a women's section. No doubt one hundred lectures are given at institute meetings on live stock feeding to one on proper food for man.

The matter of the relation of different members of the family to each other, family integrity, and like subjects, should always be given a prominent place on the program. That home making is a vocation should be emphasized. The conditions under which children are brought up and trained needs study, not cold blooded statistical investigation, but healthy sympathetic study. The advantages of country life should be emphasized—not the sentimental side so much expounded, but the fact that people in the country live under the most normal and what ought to be the most ideal and wholesome conditions; and the opportunities for personal growth and the chance to be of service to others, is worth being made much of.

Read that little book, What One Woman did for Farm Women, and see how near you can approach being a Mrs. Mayo. Her work will be felt in Michigan for generations to come.

I do not know that the architecture of rural communities is any worse than that seen on the average street of small cities, but there is a chance for improvenent of both. Surely the city house is not adapted to the needs of country life, and much work both in planning and location of buildings would be worth while.

The average country kitchen is usually not half as well equipped with conveniences as the farm itself. If there is any place on earth where labor-saving devices and modern conveniences are needed, it is in the average American farm house.

The matter of the sanitation of rural communities is one that affects both city and country alike. Many of our worst contagious diseases are commonly traced to farms as a source. The disposal of wastes, the protection of water supplies, and the production of clean, safe milk, will permit of all the extension lectures that can be given during many years to come. Home nursing too, and the prevention of disease, the fact that fresh air is not fatal when breathed by human beings, also need much demonstration.

There is a field for education in art, too. The fact that reproductions of the work of great masters can now be secured at the same price that is paid for the gaudy chromo, leaves no excuse for everyone not having in his home copies of those paintings which bring out all that is best in mankind.

Taste in dress, too, could be much improved. That our country

people in America should adopt a style of dress which would in any way mark them as country people, is of course not to be thought of or advocated by anyone who claims to possess even ordinary common sense. But the effect of an effort to produce a bonnet at a cost of two dollars, which shall imitate exactly the bonnet of the city woman which perhaps cost fifty dollars, may be one of the things causing some of the extremely unpleasant remarks which one often overhears.

To say that moral conditions are worse in the country than in the city is treading on extremely dangerous ground, and perhaps it would be hard to maintain such a stand if once taken. This much is true, and very generally recognized by those who have lived in the country—that there is very great opportunity constantly afforded boys and girls in the country for immoral practices. Country girls especially are not sophisticated, and the recent exposures of the white slave traffic, which would tend to show that country girls furnish a large share of the unwilling recruits of this abominable business, calls for a frank discussion, somewhere, of those topics so hard to discuss.

I have mentioned but a few of the ways in which departments of Home Economics may help, but I cannot see any end of opportunities for these departments to reach out and be of real service, through well-directed extension work.

But you will say it is absolutely impossible to reach all the people. This, in a large part, is true, and if the attempt is made to rejuvenate city or country by trying to arouse and carry individuals with you, the result will be a failure. The great problem is to train leaders. It is of no use to start desirable movements unless there is some one in sympathy with them and ready to carry them on. Such persons are to be found in every community, and one of the chief duties of the person sent out by a college department is to seek out those who will make good leaders, arouse them, and leave the local work largely in their charge.

Extension teaching ought to appeal particularly to New England educational and social workers. Did you ever think what a magnificent opportunity and field for spreading the gospel of better homes, better schools, better government, and a higher social order, you have? Compare New England with any of the much flaunted states of the middle west—I care not which one— and the odds are in our favor. I can say this without fear of being accused of New England pride, for I am not a native here, although a firm believer in her future. The agencies we have at hand for making our institutions take the place

they should in the community, according to President Lowell's definition, are multiple. Geographically we have about the same area as the average state of the middle west. A score and more of the oldest and best institutions of learning are to be found within our borders. Six colleges and seven experiment stations for the discovery and dissemination of agricultural information; six boards of agriculture conducting institutes, against one, or at the most two, in any state which you might mention; six state departments of education, compared with one in any other state; cities well organized for charitable, educational and social advancement; unexcelled transportation facilities; an atmosphere of culture; unsurpassed wealth for the support of commendable industrial and educational enterprises; and a climate and scenery which appeal to the aesthetic side of human nature, and which are admirably adapted to teaching an appreciation of the beauties to be found in the things about us. These things form a part of the heritage of the people who live in New England. When will we realize to the fullest extent the opportunities we have, and when will we begin to take advantage of them?

The criticism is often made that New England colleges are not doing for their communities what the colleges of the middle west are doing for theirs. Admitting that an endowed institution has no direct obligations to the public, that extension work for the public good is merely an optional matter with them, and comparing the land grant colleges of New England with those of the middle west, I think the answer to this arraignment lies almost wholly in two factors. First, the lack of financial support which the land grant colleges in New England have received, this small financial support being no doubt due largely to the fact that there have been so many wealthy, privately endowed institutions previously occupying the field. Secondly, because until very recently these eastern land grant colleges have been manned not by men with state university and agricultural college training and ideals, but by men whose training and ideals partook more of the nature of the eastern classical colleges, from which most of them graduated. But a new era is upon the eastern land grant institutions. Men with the same ideals which have made the state universities of the middle west useful and great, are now guiding the policies of most of the eastern colleges where agriculture, mechanic arts and Home Economics are taught, and at even the present rate of progress the time is not far distant when these institutions may be expected to be as useful to the communities on which they depend for their life as any that can be mentioned.

To quote again from President Lowell. He says:

> We have a number of educational institutions in and about Boston. Those institutions are all endeavoring to reach out their hands to try and do something for the communities in which they live. But as yet there is practically no coöperation among them. That is the next thing we must bring about. At present we are duplicating one another's work. With coöperation there is no reason why we could not be, so far as instruction is concerned, a model community.

To the end that such coöperation may be cultivated and secured, a meeting of all the New England college presidents has been called early in January.

That there is need of carrying the principles of Home Economics, using the term in its broadest sense, abroad over all the land, is, I believe, generally admitted. That colleges and universities, especially those supported by state and national funds, have a duty to the communities in which they are located, and to their respective states, is also generally admitted. It then remains for this association, and for officers of such institutions as have departments of these sciences, to make possible through an increased corps of instructors a general dissemination of useful information; and it behooves those who cannot go to institutions of learning for this work to offer every facility to instructors in these subjects so that the work may be effective, and may reach every person who has ambition to improve himself, his home, and the other institutions which make for the higher social welfare of the community.

SOCIAL WORK FOR STUDENTS OF HOME ECONOMICS.

CAROLINE L. HUNT.

The publication of Professor Commons' score card for houses in the February issue of the *Journal* calls attention to a form of social service which I believe that students of Home Economics are better prepared to render than any other class in the community. Perhaps I can best convey the idea I have in mind by referring to an address made by Sidney Webb before the Social and Educational League in London about two years ago. In this address Mr. Webb used the term "national minimum" to indicate that there is a certain minimum of leisure, of sanitation, of education and of recreation which in the interest of all its citizens a nation must assure to each individual citizen. And he suggested that the "formulation and enforcement of the national minimum" offered a program for action in which all classes in society, liberals and conservatives, democrats and aristocrats, trade unionists and capitalists, socialists and individualists might in spite of their differences of opinion unite.

This is not a new idea to us, of course, though in this country we are more familiar with *state minima* than with *national minima*. Every state has established a minimum of education and as it grows more enlightened it tends to raise this minimum. In Massachusetts there is now among thoughtful people a belief that sixteen and not fourteen years should be the minimum time of preparation for life. Ohio has gone so far as to empower local boards of education to use school funds for the purpose of making it possible for boys and girls to stay in school up to the age of sixteen if they wish to continue their education instead of going to work. Oregon and Illinois have by passing ten hour laws for women in factories set a minimum of leisure. We find Miss Addams in her latest book pleading, though not in these exact terms, for a minimum provision for recreation as a necessary outlet and means of expression for "the spirit of youth." The policy of the national minimum, the policy of establishing a line below which no man, woman or child may sink or be pushed has certainly determined most of our progressive legislation in the past and it seems likely as Mr. Webb

says, to "inspire, and guide, and explain the statesmanship and politics of the twentieth century."

But back of progressive legislation there must be facts upon which to found it. You cannot, for example, insist on sunlight for every man, woman and child without having scientific facts and carefully prepared statistics to show that sunlight is necessary to physical vigor. The national minimum must be a composite of values that have been tried and proved. The experimentation necessary for the establishment of these values seems to fall to voluntary organizations. But back of the efforts of these organizations must be careful scientific work. The efforts of the public health association to assure to every man a minimum of cleanliness in his environment must be based on bacteriological data. The Consumers' League in its efforts to limit the working day is relying upon the demonstration of the existence of a toxin of fatigue or other physiological data. Playgrounds associations and public school art societies find support in scientific demonstrations of the necessity of recreation and beauty as factors in the normal, healthful life.

Professor Commons' score card is, as I understand it, one of the most important steps that has been taken of late toward determining what houses are fit for human habitation and what allowance must be made for rent in determining the minimum wage. But the card must be perfected; it must be used and criticised intelligently. I happened to be at Mrs. Richards' house when she received the first rough draft and she asked me to score her house. As a result she made certain suggestions which were embodied in the card and which seemed to me to improve it greatly. As the result, too, of this scoring a point came out that still seems to me to call for consideration. Of course I expected her house to score perfect. There was light on all sides, no houses near enough to it to cut off sun; there was window space far above the required amount in every room and all the other things necessary for health were present. I could give the house, however, a grade of only 98 because the land did not slope away from it on all sides. I may not understand this point but it seems to me that to suggest that every house must be higher than all other houses or else score less than perfect is like saying that there should never be a youngest child in any family because he is sure to be spoiled, or like saying that there must never be a last car on a train because it is exposed to extraordinary dangers. There are doubtless many other questions that will arise and have to be settled before the card can be considered entirely adequate.

As I said in the beginning, students of Home Economics ought to be able to give it the benefit of very helpful criticism. I hope that the use of the card will be made a class exercise in every school of domestic science in the country. House-scoring parties might be formed to do the work in groups thus reducing to a minimum the routine work of measuring. It would be necessary to get for the purpose an empty house or one with an occupant sufficiently obliging to permit his dwelling place to be scored. It will doubtless be possible to find a person who is thinking of renting a house and will be glad to have it thoroughly studied. Whenever possible two houses should be scored at the same time for this tends to bring out the weak and strong points in the card. Suppose that houses "A" and "B" are scored. When judged by ordinary methods and according to ordinary standards "A" appears more desirable than "B" and yet when judged by the score-card it receives the lower mark. This indicates one of two things; either that important points escaped the notice during casual observation, or else that incorrect relative values have been assigned to the various points on the card. The discussion which inevitably follows the scoring tends to determine whether or not the card is at fault.

In closing I want to express my satisfaction that domestic science as a means of showing a few well-favored families how to make and get the most out of their advantages seems to be occupying our attention less and less and that domestic science as a means of setting standards and of helping every member of the community to live up to them seems to be growing in popularity.

TEACHING DOMESTIC SCIENCE TO DIFFERENT NATIONALITIES.

[A query from a California teacher in regard to special methods of teaching foreigners was referred to Mrs. Mary E. Williams, Supervisor of Domestic Science in the New York Public Schools. The following report has been received.—ED.]

In the teaching of kosher cooking a double equipment is used in one school, but this is not necessary for all schools where Hebrews predominate. Excellent work is being done in some New York schools where the kosher laws are followed in regard only to the use of soap and also in regard to meat. Several school members in the Hebrew districts seem to feel that there are so many different degrees of orthodoxy that it would be useless to attempt in the public school to carry out to any greater extent the kosher cooking. In regard to Italian children, the course of study is the same as for other nationalities, as the little Italian children are most anxious to learn American ways. The Italians are not great meat eaters, and they are also taught their own dishes such as macaroni and spaghetti.

Extracts from a report by Miss Mollie S. Kelly follow: "The public school teaches American cooking and American ways of living. It respects all religions, but favors none." This is what a domestic science teacher in the New York public schools said in answer to the question, "How do you teach cooking to so many nationalities and religions?" To teach them American ways, however, is very acceptable to the children, for if you ask a child who has been a few years in the public school, "What nationality are you?" the answer is sure to be, "I am an American."

In regard to the teaching of cooking to Hebrew children, the dietary laws are so distinctly a part of their life that wherever it is possible, as for instance in the opening of new kitchens in Jewish districts, the kitchens are made to conform to these laws. They must be kosher, or the children will not taste anything cooked there. For instance, no soap is used in washing dishes, although soap may be used to wash the dish-cloths and towels. In the dish washing only sapolio and hot water. is used. In some kosher kitchens the sapolio is of a Yiddish make,

colored pink and blue, but in most domestic science kitchens the ordinary white sapolio has been adopted.

Milk and meat are never mixed. A separate set of dishes must be used to cook and serve them and they are never combined in one dish, or served at the same meal. With the changing population in New York, one nationality replacing another, in many domestic science kitchens the double equipment is not used, the meat lessons being replaced by extra housekeeping and baking lessons.

Jewish children are very intelligent, interested, and good workers. The girls nearly all marry young, at 17 or 18, and many go no further than the public school. Even there, the thought of the future is uppermost, "I think," said one little girl, "that the nicest thing for a girl to know is to keep the house good and make the meals." Or, as the school motto, "The mission of the ideal woman is to make the whole world homelike," was rendered, "We must keep the house clean, and don't let any roaches creep round."

In a Jewish school are found many nationalities, Roumanian, Austrians, Russians and English. They are all bound by the common dietary laws, but each country's methods of cooking have been adopted.

Spaghetti and macaroni, served with cheese are of course the familiar dishes of the Italians. Cooking with cheese among the Jewish children is commonly described as "Italian cooking." The Italians use the dried peas and beans for soup, but these are never used among the Jews until the children use them in the school kitchens. The common American cereals, as oatmeal, farina, etc., are not popular dishes in the school kitchens, unless served with fruit in some such combination as oatmeal and bananas, or farina and prunes. The teacher in an Italian district spoke of "corn-meal." The children looked blank, until some corn was shown them, when a general cry of "a polent," was raised. Corn-meal mush fried with a very appetizing blending of meat or used as we would use toast, usually forms some part of a truly Italian dinner.

So many times the teacher in an Italian section finds it of great use to her to know the common Italian names for things. For instance in a class of children for whom the language was still difficult, the teacher gave the directions, "Now you may take out your saucers." No response. But at the word, "piatina," every drawer flew open. However, in the kitchen, English is used as much as possible.

Italian children as a rule are very responsive and so full of life that it is not easy to concentrate their thoughts. "My greatest difficulty," said a domestic science teacher, "is that my Italian children are so

eager to begin, they start long before they know what they are going to do." They are very anxious to be Americanized, and quick to learn American ways.

"But what good is it all—do they use it at home?" That is the question a cooking teacher has asked her much oftener than a teacher of algebra or physics, or any of the other branches. "I took my brother the cake I made and he liked it so much I made it three times." Or, "My mother said things for tea must be sweet, so she put some sugar in the tea-biscuit." The things the children learn in the kitchen are most interesting to the mothers who feel that this is something they can understand.

Miss Amelia Cohen also reports the following as to the kosher kitchen:

The main point to observe in conducting a kosher kitchen is to keep separate all dishes used in cooking milk or milk products and those used to cook meat in. This necessitates a double equipment kept in separate closets, i.e., two different sets of utensils. Even a double set of dish-pans and towels should be provided. If the pots, knives, forks, dish-pans, towels, etc. of each set are of different shapes or colors the practical working out of this idea is made more feasible—for if they are all alike they must be marked to distinguish them.

No soap or any cleaning materials which contain animal fats should be used in washing either set of dishes. However, soap made from kosher fat can be used for washing dishes used to cook meat in. In a kosher kitchen the free use of sal-soda solution, bath-brick, rottenstone, and ashes is to be recommended.

All shell fish and fish that have no scales or fins are not considered kosher. The hind part of any four legged animal even though killed kosher is not used, and all meat from the pig is excluded. All meat from the fore-quarter is put through a certain process before it is called kosher and so is poultry.

Carrying out these ideas, most dishes taught in other school kitchens can be adapted to a kosher kitchen. Examples are potatoes, whether baked, boiled, riced, or creamed; all cereals; eggs; fruits baked or stewed; junket; cheese ramekins; custards; bread, cornstarch or tapioca puddings; cream soups; muffins; popovers; tea biscuits; cakes; yeast breads; rolls and buns; all vegetables; meat (from the fore-quarter only); poultry (fresh killed and kosher); fish and noodles.

In equipping a kosher kitchen, both sets of utensils must be entirely new because the old equipment has been used for both meat and milk and therefore is considered "trefa" (not kosher).

THE TURK AND HIS TABLE.

N. TASHJIAN.

Nowhere in the world is there so rich or varied a table as in Turkey. The country is situated where tropical and semi-tropical fruits and vegetables abound, as well as products from the more temperate zones. Not only has Turkey good things to eat in abundance, but she has also an almost unlimited number of styles of cooking and serving, due to her cosmopolitan population. It is for just this reason almost impossible to make a general statement as to Turkish habits and customs of eating and living. In most of the cities, and especially among the educated class, the European manners of living and table service are adopted. The old-fashioned mode of living and eating still prevails, however, in some of the smaller towns and villages.

Here is a description of an old-fashioned dinner. The table consists of a large circular copper tray set on a low stool. Around this table the guests take position on low cushions. In the center of the table are fifteen to twenty small dishes, containing various delicacies, such as preserved rose leaves, cherry jam, grape jelly, sardines, cheese, olives and the like. A slight skirmish with these appetizers prepares the way for the real business of the hour. Course after course is brought on a big dish and set in the middle of the table, from which all may help themselves. Many of the dishes are meats cooked in appetizing ways and well seasoned. After a succession of ten or twelve courses, various fruits and sweetmeats are served and last of all comes the thick Turkish coffee served in tiny cups with saucers.

After this absorbing labor of eating, the washing of hands is essential. This is accomplished before the guests leave the table. A servant carries around an ewer and basin and each one in turn washes his hands.

Conversation does not flourish to any extent at Turkish dinners, save ejaculations of approval of any particularly tasty bit or some compliments to the hostess on her ability in cooking. In some parts of Turkey the social life consists mainly in giving big dinners to a large circle of friends. The Turk, with his characteristic hospitality and love of display, plays an ideal part as a host. The Turkish housewife prides her-

self upon taking an active part in cooking, even when she has a number of servants. There is no greater honor to a guest than to be served by the hostess herself, and with the additional knowledge that she herself has prepared the dish. The Turkish housewife is well aware that the most effective means of winning and keeping her lord's heart is by keeping a well supplied and varied table, and to this end all her attention and skill is directed from her childhood.

Turkish dishes as a rule require great skill and care and much time for preparation. I shall not attempt to describe dishes which require eight hours of cooking and a good many years of experience to prepare well. These, beyond satisfying the curiosity of some and arousing the pity of others for the poor housewife, would be of no practical use to the American housewife.

Here are some simple recipes for preparing dishes which I trust will be gladly welcomed by those who like to have something new, easy, and at the same time delicious, and which show in perhaps the most direct way the character of typical Turkish dishes. Each land has its favorite varieties of vegetables and its spices, seasoning, and so on. This means that the recipes of one country often need some study to make them suited to the conditions and materials found in another country. The Turkish dishes selected have been tested with American materials and American cooking utensils. They were studied experimentally in the attempt to prepare typical Turkish foods under new conditions.

Pilaf, which is a standard dish in Turkey, is an excellent way of preparing rice and the method described below is the easiest one, requiring only 30 minutes. Put in a pan 4½ cups of broth or water and bring to a boiling point. Add to it a little tomato juice and season it with salt and pepper. Wash two cups of rice and put in the boiling broth or water. Do not stir the rice, but decrease the heat as the broth is being absorbed by the rice. After 10 or 15 minutes, all the broth should be absorbed and the rice thoroughly cooked, keeping still its single grains. Take the pan away from the fire. Melt a tablespoonful of butter and pour on the rice. Cover the pan with a thick linen or cotton cloth and then put on the lid. This will keep the rice soft and yet not mushy. Serve five minutes later. Never stir the rice while cooking or afterwards, as the slightest stirring would convert the whole into a pasty mass. The rice should be thoroughly cooked and still have each grain firm and distinct.

Tomatoes are a favorite vegetable in the Mediterranean region. Stuffed Tomatoes or Domates Dolma, to give them their Turkish name,

are prepared as follows: Select a dozen smooth and round tomatoes. Cut a thin slice from the stem, leaving a little hinge. Remove the seeds and pulp, and fill the cavity with the following preparation:

Two tablespoonfuls of cooked rice, half a pound of raw beef, 2 onions, all passed through the grinder. Season with salt, pepper, and parsley, and fry in a pan for 10 minutes, stirring all the time. Fill the tomatoes with this mixture and cover the top. Put the tomatoes into a granite pan and bake in an oven 20 minutes. Take them out with a broad knife and serve them hot.

Perhaps no dish is so genuinely Turkish as stuffed grape vine leaves or Sarma, and strange to say, this is the dish best liked by all foreigners. Perhaps the novel combination and still more novel way of cooking counts in its favor.

The careful wrapping of the tender grape vine leaves suggests to one's mind the wrapping of the green scarf (sarup) around the head of the Mohammedans. At every wedding dinner this dish is served, and perhaps quite a number of the wedding guests have spent the previous evening helping in the preparation of the 500 or more little wrapped parcels which are soon to disappear. On such occasions one of the company usually tells a tale from the Arabian Nights, while the rest are busy with their fingers. So much is this delicacy relished in Turkish boarding schools that the standing of the institution is said to be judged by the frequency with which it is served.

For the preparation of Sarma or Taprak Dolma, a hundred or more fresh tender grapevine leaves will be needed. Wash them well and boil them in salted water for a few minutes, enough to make the leaves a little tender. Take the leaves out of the water and press out all the water from them. Prepare the following stuffing: A pound of minced raw mutton and two spoonfuls of broken rice. Season with salt, pepper, and parsley, and mix them well. Take a single vine leaf in your left hand and break the stem off. Put in the middle of the leaf a little of the stuffing, the size of a walnut. Fold over it first the end of the leaf, then each side, roll from top to bottom until it looks like an inch long sausage. Place the stuffed leaves close together in a small pan layer after layer. Pour on two cups of water, cover the pan and cook on a slow fire long enough for the rice to be thoroughly cooked. A small plate will be found helpful to press down the stuffed leaves while cooking. Do not stir while cooking as it may unfold the vine leaves. The secret of the dish is in preparing so that the rolls will keep in perfect shape and the leaf and stuffing not come apart. This

is served with some sour sauce, ten to fifteen of these being enough for one person.

Egg Plant Pie or Mousakkah is an example of a well-seasoned dish made from a vegetable which itself has no very marked flavor. Slice half a dozen egg plants lengthwise one-fifth of an inch thick, salt each slice and put in piles under a weight for several hours. Wash off the salt and fry until slightly browned on both sides. Take half a pound of minced raw meat, season and fry in its own fat until well cooked, stirring all the while. Put in a baking pan alternate layers of egg plants and the prepared meat, add just a little water or tomato juice or a few sliced tomatoes if desired. Bake ten minutes or until well browned. Serve hot.

Turkish egg plants are slender and long, and have a sweeter or more decided taste than the ones here. It is not necessary in Turkey to put the egg plants under a heavy weight. They can be cooked right away.

Stuffed Oysters are a favorite Turkish dish, the smooth-shelled oysters common in Turkey being used. These are not obtainable in the United States but in the study of American materials and Turkish dishes it was found that American clams could be substituted with good results. They should be prepared as follows:

Wash four dozen clams well and put them in boiling water till the shells begin to open. Prepare the following mixture for stuffing the clams: Cut 5 large onions very fine, mix it with a teacupful of rice. Season with salt, pepper and parsley. Put in a frying pan a teacupful of olive oil and fry in it for a few minutes the mixed rice and onions. Stir it all the while, so that the onions do not burn or get brown. After the onions are slightly softened, remove from the fire. Open each clam, remove the loose membrane, put a little of the stuffing in and close the shell. Be careful not to pull the shells apart. Arrange the clams in a baking pan layer after layer. Barely cover with water. Cook until almost all the water is absorbed and the rice cooked. Decrease the heat gradually. Serve either hot or cold.

All Turkish dishes have an individual taste and appearance, due to the cooking of vegetables and meat together. In this way the meat imparts to the vegetable some of its essence, while the vegetable yields its delicate flavor, giving an altogether individual taste to the dish. In Turkey vegetables are very seldom served merely boiled, they are either fried after dipping in egg or prepared with meat. These combinations give rise to innumerable ways of preparing various dishes, and for this reason Turkish meals are never in danger of becoming monotonous. A

well organized home would never dream of serving the same dish twice within a week or two. In America, most vegetables are just boiled, seasoned, and served separately with the meat. This has it own advantage no doubt, and the simplicity of preparation may have been its great attraction, but this is the great cause of the sameness of American meals.

Sweets are much relished in Eastern lands and Turkish sweetmeats are perhaps the food products which are most familiar outside of Turkey for Turkish Delight and similar kinds of confectionery such as Rahat Lokum, Paklava, and Kadaif, are very popular in Europe and the United States. Recipes for the preparation of such Turkish sweetmeats can be found in journals and books which are concerned with cookery.

The examples and descriptions of Turkish dishes which have been given are sufficient to show something of the character of the foods and the ways in which they are eaten in Turkish homes. Anyone familiar with the subject will concede that the Turk has an abundant and varied diet, and it should be clear that the list of palatable foods and dishes is a long one. Indeed, this might be expected, for cereal crops and farm animals are raised in abundance in Turkey. Fruits and vegetables are grown in great variety, Turkey, like most of the Mediterranean region, being a very favored spot from an agricultural standpoint. Furthermore, skill in cookery is a matter of pride with Turkish housewives.

THE PASTEURIZATION OF CITY MILK SUPPLIES.

MINNA C. DENTON.

The details of the process of pasteurization as practiced in different localities and by different physicians and sanitarians vary widely. It may mean anything from ten or fifteen minutes' to thirty minutes' heating at a temperature of from 60° C. (140° F.) to 75° C. or even 80° C. (176° F.) As a rule, the higher temperatures and longer periods of time are the standards recommended by earlier authorities, more recent ones having recognized two important facts, first that the undesirable changes produced in the heating of milk for a number of minutes at 75° or 80° or even 70° C. take place to almost as great an extent as if the milk were boiled; second, that a large percentage of non-spored bacteria, including all pathogenic forms (under properly arranged conditions) are killed at 60° C. maintained for twenty minutes, thus making the milk as safe as the somewhat higher temperatures which still fail to destroy the vitality of the spores.

In order that pasteurization shall accomplish the maximum benefit, other details besides the degree and time of heating must be attended to. A complete definition of the process would cover the following points:

(1) Exposure for a few minutes (10 to 20) to heat not above 70° C (158° F.), or preferably 5° to 10° C. lower than that, and under the following conditions:

(*a*) The vessel in which the milk is heated must be covered closely and filled to the cover or almost so; for exposure to any considerable body of air (or even vacuum) promotes the formation of a scum or film on the surface of the milk, and bacteria caught in this surface film withstand heating much longer than do those in the fluid milk. This has been definitely proven for *B. tuberculosis* by several competent observers.

(*b*) A much more nearly ideal arrangement if practicable would be the heating of the milk in its final containers, *i.e.*, the glass bottles in which it is to be distributed. This avoids reinfection, or contamination during bottling, always a considerable source of danger, but it

adds much to the cost of the milk, on account of the increased manipulation and increased attention required, necessity for better grade of glass bottle, etc. Furthermore, the time required for this process is so great as to exclude it from use by any large company, and there are other objections to it from the practical standpoint.

(2) Immediate and rapid cooling of the milk to a low temperature at least 16° C. (61° F.) or much better, 7° C. (45° F.). Without this precaution, the heating of the milk not only does no good but actually causes harm. For bacteria grow very rapidly (20 to 30 minutes is often the lifetime of the individual, in many forms), and especially at lukewarm temperatures, the degree which milk left to cool at room temperature maintains for two to four hours. Moreover, many undesirable bacteria will usually grow more readily in milk that has been heated, other things being equal, than in raw milk. This feature, it should always be remembered constitutes a serious objection to all pasteurization.

In home pasteurization where the milk is to be used in an hour or so, this cooling process is of course unnecessary. Otherwise the warm milk bottles should be cooled at once in running water or frequently changed water, before being set into the ice box.

(3) Maintenance of a low temperature during transportation, storage, and delivery of the milk, both before and after pasteurization, also during storage after delivery to the consumer. The temperature of 10° C. (50° F.) is usually indicated as the maximum that should be permitted.

(4) Care to use a pasteurized milk for purposes of infant feeding within twenty-four hours at most. Even though it may seem perfectly sweet, this does not, under present conditions, prove that no harmful changes have taken place in it. This maximum of twenty-four hours should be reduced when possible for infant use, in cities where milk of various ages from various sources must be transported long distances both before and after pasteurization—particularly in summer heat, or with insufficient refrigeration facilities.

Effect of heat upon milk.—The boiling of milk is said by various authorities to cause certain chemical and physical changes, as follows:

(1) The various proteins and nitrogenous bodies are known to be changed to some extent, though authorities do not agree as to details. It seems however, that certain of them (lecithin and nuclein) are more or less decomposed, the milk albumin becomes less soluble and be-

gins to coagulate, even at 55° to 75° C. (according to Solomin, Schlossmann, Snyder, Rosenau); caseinogen is attacked, with the result that it is more slowly and imperfectly acted upon by ferments (rennin, pepsin, pancreatin, especially the first named); traces of hydrogen sulphide are formed, probably by cleavage of protein substances.

(2) The mineral salts or inorganic matter of milk are somewhat affected. There is some precipitation or fixation of soluble calcium (and magnesium?) salts, forming (probably) the insoluble tricalcium phosphate (Kastle), also some calcium citrate (probably); caseinogen has a part of its lime salts split off (Swithinbank). Some of the organic phosphorus (of nuclein, lecithin, etc.?) is oxidized to inorganic phosphates. The modern point of view, that the linkage of these mineral salts with the otherwise inert protein molecule is of the utmost importance in biological as well as in other physical and chemical reactions, would indicate that the above-mentioned changes may have great significance in estimating the nutritive value of heated milk.

(3) The fat emulsion of normal milk is interfered with, because the clusters of globules are broken up and the fat more uniformly distributed throughout the liquid, perhaps also because the viscosity of the milk is decreased by heating and so the fat has greater difficulty in rising, or because the salts are deposited on the surface of the fat globules. In any case, the cream fails to rise, or is much thinner than that on raw milk, and does not whip into a froth.

(4) Lactose is affected; it is sometimes said to be partly caramelized; its specific rotatory power is changed. (Undoubtedly some caramel would be formed when it is allowed to scorch on the bottom or sides of the containing vessel.)

(5) Carbon dioxid is expelled, and so are certain other gases and volatile substances.

(6) The cooked taste develops; whether it is due to changes in milk proteins, or sugar, or only to the driving off of gases and volatile substances, is not known.

Which of these changes is also produced by pasteurization? That depends upon the temperature at which pasteurization is performed At 80° C. (176° F.), all of them appear, only to a less degree than at the boiling point; between 70° and 80° C. (158 to 176° F.), most of them appear at least to some extent (but authorities differ); between 60° and 70° C. (140° to 158° F.), very few changes appear. Rosenau says that the fat globules are affected by thirty minutes at 65° C. (150° F.); and some authorities claim effects upon lact-albumin at 60° C. or

even below, though others put this at 75° C. At 60° C., if heated for not more than twenty minutes, most agree that there is no appreciable change in physical condition, chemical composition, or flavor.

The importance of these changes to the bottle-fed infant, when the heating is such that they do occur, is variously estimated. The unfavorable conditions with which they have been most commonly connected are such as precede or accompany scurvy, some forms of anemia and rickets. It has been suggested that the oxidation of organic phosphorus and calcium by heating is directly related to the lack of phosphorus and lime in the bones, which occurs in rickets, and much evidence has been adduced to show that this is the case. Recent opinion agrees, however, that so far as they have been made out, the causes of this disease are to be sought in a different quarter, bad air being frequently alleged as prominent among them.

The cause of scurvy is not known. But, however much authorities disagree concerning it, there is substantial agreement that scurvy due to pasteurized (not boiled) milk is rare, and also that the dangers of a warm, dirty, stale milk (*i.e.*, the ordinary city supply), fed to the infant, more than counterbalance any slight danger of scurvy. This is more especially true, as infantile scurvy is easily preventable and easily treated, responding in a few hours to the use of such antiscorbutics as fresh milk, orange or grape juice, beef juice, etc.

As to other conditions of malnutrition or physiological reactions due to the prolonged use of highly heated milk, English and American physicians, at least, seem often to consider that many children do not do well for long periods of time upon boiled milk. A common and well-founded notion is that boiled milk is constipating not only to children but also to most adults. To what extent these observations would apply to pasteurized milk, depends upon the nature of the pasteurizing process. Some authorities consider pasteurized milk less easily digestible than raw milk, and others more so. Other changes wrought in milk by heat are as follows:

(1) Milk contains a number of enzyms. Among these are the proteolytic (trypsins, *e.g.*, galactase, which according to some authorities plays so important a part in cheese-making), the amylolytic or starch-digesting; the lipolytic or fat-splitting, a lacto-kinase (a ferment which accelerates though it does not cause the digestion of lactose in the intestine), the catalases (ferments which are able to decompose hydrogen peroxide), oxidases, and peroxidases; and so on. It must be confessed, however, that evidence as to any considerable im-

portance of the natural milk ferments in the infant's nutrition is mostly wanting. As to the effects of heat upon these ferments, those found in cow's milk are, in general, weakened by thirty minutes at 65° C. (150° F.) and totally destroyed between 70° and 80° C. (158° to 176° F.), by a much shorter period of time. It would seem, then, that the most recent pasteurizing standard, viz. 20 minutes at 60° C., does not harm cow's milk in this respect.

(2) Milk contains, occasionally, various bacterial products and antibodies. Animals rendered immune to diphtheria or to tetanus excrete the antitoxin in their milk. As is well-known, the milk of a sick cow is likely to be unwholesome; and specific toxins are supposed to appear in the milk when the corresponding infection is a general one.

Of the antibodies, the only ones which could under ordinary circumstances be of any conceivable value to the infant are those connected with the so-called germicidal power of cow's milk. It has long been known that there is a slight decrease (or at least an apparent one) in the number of bacteria in new milk, for two or three hours or sometimes longer, though it is slight indeed compared with the enormous increase which takes place immediately afterwards and continues until hosts almost innumerable are reached. It is sometimes supposed that the bacteria which disappear in new milk are killed by some antagonistic substance which the milk contains. It is possible, however, that, what the milk contains is not bactericidal substances but agglutinins, that is, some substance causing bacteria to form in small clumps or clusters, thereby resulting in an entire cluster being counted as one bacterium under ordinary counting methods, and the decrease being apparent and not real. In any case, this action of milk cannot assume much importance in relation to pasteurization for two reasons: first, it is in fresh milk often so slight as to be practically negligible; and second, so variable as to be perfectly unreliable.

The question of bacterial toxins in milk and the effect of heating as possibly favoring the production of these toxins, is not so easily disposed of. It is well known that a milk loaded with undue numbers of bacteria, as is the average city milk in hot weather, acts in many cases as an irritant to the delicate mucous membrane of the infant's digestive tract, whether because of the presence of the bacteria themselves and their ability to break down the normal defenses of the intestinal epithelium and pass through it, or because of the irritating nature of their products in the milk in which they have fed and which they have profoundly altered, or because of both these conditions.

Be that as it may, statistics show an enormous increase in the diarrhoeal death-rate during the hot season, and that the bulk of this increase is furnished by the "under-one-year" deaths from the bottle-fed infants of the poorer quarters of the city, especially. The inferences usually drawn are that cow's milk in the condition in which it reaches the average child in hot weather, is by no means invariably satisfactory as a food; and that its unsatisfactory condition is often connected with the enormous increase in its bacterial flora which takes place at such times.

Now there is no doubt that this all too common condition is due in part, at least, to specific infection—say to pathogenic streptococci (though to be sure, the relation between the pathogenic and the ordinary milk streptococci is not at all understood), or to bacteria belonging to or related to some one of the "intestinal" or colon-typhoid groups. Further, this infection may be carried by the milk, or by flies, or because of unclean personal habits or defective sanitation. It seems, however, that specific infection does not always take place; often the trouble is due, apparently, to large numbers of "ordinary" bacteria or their products in the milk. Dr. Park's now classic investigation led him to conclude that heating the milk to slightly above 170° F. (77° C.) does much towards destroying not only the bacteria in milk, but also towards removing at least a part of their irritating and poisonous products. It served to prevent intestinal troubles almost completely when the milk used was of good quality; but even when the most impure store milk was used, it usually proved effective if the milk was heated shortly before use, unless the original contamination amounted to many millions of bacteria per cubic centimeter. With raw milk, even that of good quality, the majority of infants suffered more or less from diarrheal troubles and many of them seriously so. Only the purest milk, then, should be used raw, especially in summer.

The results obtained by Dr. Park in combating the dreaded summer gastro-enteritis of infants with the weapon of pasteurization are by no means isolated. Dr. Freeman and others produce statistics to show that the infantile death-rate of New York City was cut in two within the space of 14 years by the introduction of the habit of boiling the milk. Mr. Nathan Straus, whose charities in connection with the milk depots and the consultations for mothers at these stations, have done so much for the New York tenement district, reports similar results elsewhere whenever his pasteurizing methods are tried, both in America and in Europe. Thus, in Sandhausen, near Heidel-

berg, in 1908, the infantile death-rate dropped to less than half the usual average for other years, after four months' work. The infants' hospital at Randall's Island (New York City) had a mortality of 44.36 per cent in 1897; in 1898 it began using the Straus pasteurized milk and had a mortality of 19.80 per cent. Dr. Hope, at Liverpool, using humanized sterilized milk at the infants' milk depot, secured a reduction of 50 per cent in the mortality of these children as compared with the general mortality rate of infants in the rest of the city. Pasteurization of the city supplies in Vienna gave a decrease of 50 per cent in infantile mortality, we are told. Many workers in French and German cities report similar results. It must be remembered, however, that general sanitation goes hand-in-hand with pasteurization, in all of these cases, and how much credit belongs to the one and how much to the other, it would be hard to say.

The contention of Flügge and others, that pasteurization should be forbidden by law, since it kills off the non-spored lactic-acid forming bacilli and so leaves the field clear for the toxin-forming spore-bearing peptonizing and putrefying anaërobes, seems to be answered in part by the above investigation and experiences. It is doubtless true that upon many occasions, if a previously heated milk sample be kept long enough, toxin-forming bacteria may form extensively in it; that some of these toxins are very powerful, and that not all of them are destroyed by heat. Whether this would be likely ever to happen with the average city milk produced under conditions approaching decency, kept moderately cool, and promptly used, is of course another question.

Recent work by Colwell and Sherman, on the determination of peptones in a pasteurized milk as it ages, shows us that the high-temperature pasteurization does favor the growth of the peptonizing bacteria at the expense of the lactic-acid formers; but they report that where the lower pasteurizing temperatures are used, the lactic-acid-producing bacteria grow at about the same rate as do the peptone formers. Thus the objection, that pasteurization interferes with the natural souring of the milk and makes it more difficult to recognize an old or an unsafe milk, is losing ground so far as low-temperature pasteurization is concerned.

It cannot be too strongly emphasized, however, that the nature of the flora in milk does vary enormously with different sanitary and other conditions. I have known of localities in which it seemed to be a common knowledge among housewives, that if a bottle of milk kept in the ice-box or say just outside a shaded window in winter was to be

used late in the day or kept over until the next day after it was delivered, it must have the paper cap removed to allow access of air; otherwise it would be "not sour, but bad—funny-tasting, you know." It would seem that from imperfect sterilization of bottles or from some other source, there must have been present an unusual number of putrefying anaërobes. Some sanitarians tell us that one of the tests for an average good milk, even after it has been pasteurized, is its failure to putrefy at room temperature within 48 hours (though for this test they usually remove the cap and substitute therefor a sterile cotton plug). It would seem, then, that raw milk kept on ice or otherwise cooled ought not to putrefy within twenty-four hours though kept closed up in ordinary bottles.

Rosenau briefly sums up the evidence for ptomaine formation in milk as set forth by Flügge, Vaughan, and others, and decides that its relation to the poisonous qualities of milk is doubtful; that probably most of the irritating organic acids of ordinary fermentation, as well as the volatile acids produced by anaërobes, "when they produce acute symptoms, result more from fermentative processes within the gastro-intestinal tract, rather than from those produced in the milk before it is taken." It should be remembered that the opportunity for milk bacteria of various sorts to preserve their vitality and finally to succeed in setting up fermentation processes within the alimentary canal of the infant, is comparatively great; since the very young child's gastric juice normally lacks hydrochloric acid and therefore has little disinfecting power.

Apart from the connection of the milk supplies with the infantile diarrhea death-rate, what is the value of pasteurization as a preventive measure against the dissemination of tuberculosis, typhoid fever, scarlet fever, diphtheria, chicken-pox, small-pox, measles, cholera, foot-and-mouth disease, anthrax, or any other diseases which may possibly be spread by means of dairy products?

There has been a good deal of discussion as to whether *B. tuberculosis* is killed at pasteurizing temperatures, it being especially resistant under certain conditions, *e.g.*, in the scum which readily forms over the exposed surface of heated milk; or in case it be found in collections of mucus or pus—a condition which should be readily detected with the eye. Theobald Smith, Rosenau, Russell and Hastings, and a number of other workers whose decisions carry the weight of authority, have announced that 20 minutes at 60° C. (140° F.) is amply sufficient to insure the death of this refractory organism, even so few as ten

minutes being ordinarily enough, provided milk which contains mucus or pus be rejected (as it most certainly should be), and provided precautions are taken against scum formation.

The thermal death-points of the other pathogenic organisms mentioned above, so far as we know them, occur at lower temperatures. Rosenau reports that *B. typhosus* is killed by two minutes at 60°; that diphtheria often disappears in the first minute at 55°; that *B. dysenteriae* may sometimes withstand five minutes at 60,° but never ten minutes. Pasteurization, then, would be an efficient guard against the spreading of their infection through the milk supply, provided an adequate and rigid system of inspection can assure us that there is no danger of infection subsequent to pasteurization through persons who handle the milk.

But what is the danger that these diseases would be disseminated in any event, by the milk supply? So far as tuberculosis is concerned, it must be confessed that it is mostly hypothetical. Somewhere from 2 to 20 per cent of our milk does contain tuberculosis germs—estimates vary greatly; but are they dangerous to man? The bovine tuberculosis germ differs somewhat from the human, being usually much lower in virulence; yet human tuberculosis has in some instances been contracted from bovine sources. Estimates as to its frequency vary from that of von Behring, who maintains that practically all cases of tuberculosis have been incipient since infancy, when the germs were taken into the system with cow's milk, to that of Koch, who believes that eleven-twelfths of all tuberculosis and probably all pulmonary tuberculosis, is of human origin.

When it comes to typhoid fever, we are more sure of our ground. Many of the violent epidemics due to milk have been recognized and described. Whipple estimates that in large cities, about 25 per cent of all typhoid cases have been infected through milk and it becomes increasingly clear to us that when the water supplies are made safe, milk is the most important remaining source of infection.

As for scarlet fever and diphtheria, the danger of their more than occasional transmission through milk is now well understood. Many sanitarians consider that they are probably more largely disseminated through milk than is tuberculosis.

To summarize: Most of the objections to pasteurization are founded either upon certain undesirable results which obtain when the milk is heated for some minutes to above 70° C., or else upon the supposition that pasteurization will be made to take the place of

attention to cleanliness and sanitation. Presumably the reason why health authorities in a number of the largest cities favor scientific pasteurization is that the work of raising standards of cleanliness and sanitation among so great a number of far-distant milk-producers proceeds so slowly and is so far from complete, that they deem some additional safeguard necessary for that part of the milk-supply which falls below a reasonable minimum standard. Presumably, then, this proposal for pasteurization does not mean a relaxation of sanitary inspection in any quarter. Neither does it mean that no supply except pasteurized milk will be available; though the price of a clean safe raw milk, in a large city, must for some time to come be much higher than are the present city prices, just as we find "strictly fresh eggs," "fresh eggs," and "eggs," selling at different prices.

It is true that there are a few smaller cities which have already been able to attain some measure of success in reforming the dairy business; conspicuous among these are Copenhagen, Denmark, the world's model in this respect; and in this country, Rochester, N. Y., where Dr. Goler's work reduced the infant mortality one-third within ten years—and that without the use of any heating process whatever. But in a city where much of the daily supply must be brought a distance of from 100 to 400 miles, conditions are much more difficult, and extensive reform naturally proceeds more slowly.

The great dangers of pasteurization are: (1) That improper methods of pasteurization may be employed; (2) that improperly handled milk may be pasteurized, and (3) that milk after pasteurization may be improperly handled. But the attainment of a reasonable degree of safety in these respects, may be for some time to come a much simpler matter than the attainment of the higher standard which should be required to make a raw milk safe enough for infant feeding.

REMARKS ON FOOD STANDARDS IN THE PUBLIC KITCHEN AND THE HOME KITCHEN.[1]

BERTHA STEVENSON.

However much we may criticise the housekeeper, we must admit that she still produces the very best food, including the most difficult of all things on the bill of fare—bread. Of course everybody here knows that good bread cannot be made unless it is mixed thoroughly. Each particle of flour should be surrounded by moisture so that, when the dough goes into the oven under heat, hydration can take place. In the best bread there is very little unhydrated flour; whereas all of the bread made in public bakeries in this country that I have ever seen examined in the laboratory shows big streaks of raw flour.

There was on the market a few years ago a little machine which was built on the right principles and which was a help in bread making. The wet ingredients were put in the bottom, and the dry ingredients in the top; and the dry ingredients were sifted down very slowly, while the wet ingredients were stirred very fast, and thus a good mixture was obtained. But that machine I think is not adapted to use in bakeries. As far as I know, the kind that is used in every bakery today is the big, old-fashioned sort of cylinder with square ends, in which a great arms turns, and mashes and jams everything together; and when the dough comes out it is like rubber. Some of the bakers will show the dough to you with great pride and say, "Just see how it stretches!" As a result of better mixing home made bread is better although it is often not as well baked.

When we compare her food in general with that of the public kitchen, the housekeeper deserves every bit of glory she has. Why do you think it is that we do not feel easy about eating hash in a public lunch room? We can eat it with our eyes shut at home. A young woman said to me recently, "You know, when I first went to work in a restaurant, I had no idea what restaurant habits were." She continued, "Here are two things that opened my eyes: The first week, one morning, a large

[1]Read at the Boston meeting of the Home Economics Association, January, 1910

number of salmon, frozen stiff, came in to be used for lunch. The professional cook whacked them all into the ovens without dressing them. I said 'Why do you do that?' 'Oh,' she replied, 'they will be so much easier to dress when they come out!' My next lesson was from some forgotten lamb chops. These chops had got pushed back in the refrigerator and overlooked for about two weeks. When they were discovered they were boiled in soda and made into braised lamb chops, with spiced tomato sauce. And, said my friend, They were delicious, one could not detect anything wrong with them." A professional cook is usually incurable. It is better to advertise for women to train as cooks. Never advertise for a cook.

It is so easy to doctor food in a thousand ways. Eggs, for instance, that are spoiled give up their offensive odor on being frozen. An investigation of public kitchen methods would make it clear that all of the good accomplished by the pure food laws is insignificant compared with what could be accomplished for better health in our cities if the dirty restaurants could be cleaned up.

There are a good many difficulties in the way of clean restaurants. The business buildings available for restaurants offer far from ideal conditions when the kitchen is viewed as a laboratory. Moreover, to place a restaurant in convenient reach of the many means enormous rents and a close margin for improvements. Outside of the endowed institutions and hospitals, a model kitchen is as much out of reach as is a half-acre playground for each family in the tenements. Still, if there is knowledge enough and effort enough, conditions can be made sanitary. This is no more than is done in surgery; for example, if an operation is to be performed, one can get sanitary conditions already provided in a hospital; but, if it is not convenient, or if for any reason the operation must be performed at home, the home conditions, the home room, can be made sanitary. So it is with respect to the kitchen, as we find it; it can be made sanitary and kept so.

Then, too, the public has not waked up yet to the necessity for supporting proper standards in foods. Every year we come across a difficulty when strawberries appear. They start from across the continent; and, in the early season, by the time they get here, at least half of them are soured and crushed and are not in proper condition for this market. Then the few strawberries that have ripened nearer by are at a premium, and only people very well-off can afford to buy them. But the minute strawberries appear, a demand is made for strawberry short cake. And every year some of us who are in the lunch-room business

go through with this same thing. We explain, when we are asked to have strawberry shortcake, that strawberries are too expensive, and that we have to wait until the near-by strawberries are more plentiful. And then the reply always is, "Well, So-and-So has strawberry short-cake now. If you can't play the game, what is the matter?" Well, theway So-and-So has strawberry short-cake when good strawberries are really not in the market is this: There are a great many second-rate, half soured, crushed strawberries, and a very few good ones. So it is very easy to buy five crates of crushed one that are not fit to eat, and crush them some more, and sweeten them and make a strawberry short-cake, and buy one crate that is good, and put two or three good berries on the top of each short-cake. When we tell this to our patrons, we always get the reply, "We don't know anything about that." And we always reply, "But you have *got* to know about it."

Again the workers in the restaurants, other than the cooks, present one of the difficulties in trying to serve really clean food. Many restaurants workers think it is fussy not to pick up a piece of bread that falls on the floor and put it back on the table—I mean downstairs; of course, they don't do that before the customers. But these same people, when they really get interested in the work and are trying to do it well through and through, begin to think and then they say, "It is not square to pick up a piece of bread off the floor." I think it is encouraging, when a girl who starts out thinking it is fussy, decides it is not "square" to do behind a customer's back what she would not do before his face.

A strong effort is being made by those who really regard the work in a professional light, to meet and overcome these difficulties and the many others that we have not time even to name here. As for the workers' time, patience and training often bring indifferent workers to a point of enthusiasm and pride in a daily joint effort to prepare and serve the very purest and cleanest food, the kind that the best home kitchen would be proud of; food that not only tastes good and looks good, but that *is* good. And knowledge and diligence, as I have said, will secure sanitary conditions.

When it comes to awakening the public to a greater demand for, and a better support of, proper food standards, nothing is more effective and helpful than this Association. Each member here can and does do a great deal to bring people to realize the benefit or harm that can be wrought by public kitchens.

THE ELIMINATION OF WASTE IN THE HOUSEHOLD.

LUCY M. GRISCOM,

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Conservation of our resources should be understood to apply to housekeeping, as well as to mines and forests. We need to be interested in civic and national affairs, for only when these are rightly conducted can homes be ideal; unless street cleaning is properly done, house cleaning cannot be very effective. If the vacuum cleaner is allowed to dump the dirt cleaned from the rugs of a house on the street in front of the house, the dirt will find its way back to the same rugs from which it had just been so scientifically extracted. An English writer calls attention to the fact that, after arousing great sympathy for the chimney sweeps and abolishing their employment, *all* Londoners are now in very nearly their condition of griminess and lack of unshine! Here, also, in many of our cities, vast amounts of money and energy must be spent in the houses in attempts to fight the deposits of soot from without.

In spite of the use of conspicuous waste as a means of showing superiority, there is in most persons an inherent aversion to waste of what to them seems valuable. Many persons are, from ignorance, unable to realize the value of commodities which they are accustomed to seeing in quantity, and forget how valuable a little of it might be to some less fortunate person. Such persons are careless at large, in the destruction of forests, and the pollution of rivers; and, at home, in wasting water, and taking on their plates more food than they eat. All these short-sighted persons must be taught. Let us see that economy at home and abroad are closely related, and let women learn to apply the laws of economics to the household. The housekeeper should also learn a lesson from modern manufacturers who make fortunes in by-products, formerly thrown on the dump heap. She should carefully balance her raw materials and finished products in search of waste, for in a properly run household all space, time, and energy should be so utilized that some desirable end is thereby accomplished—health, morals, or intellectual and spiritual development.

The question of waste of time in a household is the most discouraging, as it is due to the long years in which the housekeeper's time has been considered as the least valuable in the world. Some irregularity is unavoidable, but every woman should endeavor to run her affairs as punctually as possible, and eventually compel her family to realize the injustice of tardiness. One of the greatest aids to time saving is routine, but it must be so arranged as to give elasticity, and allow for emergencies. One does not want such a routine as that of the little German girl who would take cold from taking a bath on Wednesday rather than on Saturday, or to have a whole week spoiled by a rainy Monday. If, however, we were compelled to decide afresh each day just what work, sweeping, washing, or baking, we should do that day we should be severely handicapped. Another advantage of routine is, that in looking at work by the week-full, rather than by the hour or day-full, it is easier to distinguish between necessaries, and non-necessaries—and when that distinction is made there comes a great saving of nervous energy. In fact, it is not only that non-necessaries are needing elimination, but often also that impossibilities are being attempted. One woman cannot, without too great nervous wear, be a pleasant companion, a fancy cook, a nurse, an expert musician and an authority on current events. A modern housekeeper must look over her field, decide first what are the possibilities for herself, and second, which of these are worth while, and then lay the emphasis in the right place. She must realize that it may be best for her next door neighbor to emphasize a different thing and they will be happier when they learn to supplement each other instead of copying. Such a woman will then be ready to realize that she will waste her employee's nervous energy, as well as time, if she does not properly arrange the work.

Professor Seager gives, among his economic laws, that of adaptation to taste. Unless this is realized in the household, we might as well live in hotels or in barracks. It is frequently dealt with, so far as concerns the family, but rarely, at least in point, where it concerns the help, but with that in view, a woman does not seem unreasonable who changes her service place several times in trying to find one where she can work without undue friction, for many housekeepers never seem to realize that their employees have tastes which should be gratified. Even a greenhorn prefers to work in the order that she herself chooses, rather than in that imposed on her by her mistress and in many cases her plan will be really as good a one. On a day when all the family

is to be from home, consider the pleasure to the cook in her choosing just what meat and vegetables she shall have for her own meals—not merely a collection of left-overs. It may be pork and cabbage she will choose, but it will be a token of her individuality.

Another waste of nervous energy for household helpers comes from a very hazy conception of what is expected of them—or, more frequently, and still more unfortunately, a very clear conception that they are to work all day, no matter how hard. According to *The Survey* there is now a law in Holland (since February, 1909) requiring a contract signed by both parties in all cases of employment, stating wages, conditions, and amount of work.

Physical energy—mere human power to do work which can be measured in feet, pounds, and time— is, on the whole, more easily comprehended than nervous energy. Proper technical training develops hand and mind together, and though I believe every woman's college should have a department of household economies, still every home should be a school of practice. How much too frequently the home is merely a parade ground in the front part and a sweat shop in the rear where all work superficially to outshine the neighbors! Some one has lately expressed a wish for a "fashion of economy." There are faint beginnings of it apparent. A wealthy woman of much education, in giving a dinner at a very luxurious hotel, surprised some of her guests by the small number and simplicity of her courses. It seemed quite like a modest home dinner, well cooked and satisfying, but without superfluities. In conversation afterwards, she explained that she felt that if twenty people there had on their plates twice what they could eat, twenty other people were starving because of her carelessness. This can be taught to even the ordinary maid of all work. A careful, conscientious housekeeper of my acquaintance was explaining to a temporary maid, a friend of the regular incumbent, the work required. The newcomer said with real admiration, "Yes'm, we all know that whoever comes here can have all they need, but you won't stand us wasting things."

Women need more and more to learn to buy and care for proper appliances. Everyone who has kept house knows either the joy of good tools, or the woe of poor ones. The reason for the latter lies sometimes in stupidity, sometimes in stinginess, often in false economy, very often, alas, in necessity—but the world will have to come to an appreciation of the fact that if housekeepers are to keep step with modern progress, they must have improved tools.

On the other hand, women are apt to treasure too many useless things. There is a good lesson in a rather charming story—The Resurrection of Miss Cynthia, by Florence Morse Kingsley. The heroine was left alone with many heirlooms and poor health. She was told by a specialist that she had but one year more to live. She decided she would enjoy that one without wasting care on the accumulated débris of her ancestors, so she had in her back yard a bon-fire of really worn-out things, and in the front a pile of half-worn ones. The latter soon disappeared as the result of an advertisement that the neighbors might help themselves from it. Then, free from care, she roamed the fields and recovered her health. Professor Patton says that one stage in individual, æsthetic development finds expression in mere ownership, and that people should be allowed to satisfy that instinct at some time. Though this should give us sympathy with those just becoming able to satisfy it, we need not remain indefinitely in that stage. Rummage sales are a good antidote when the stuff has been bought but preventive measures are better in the form prescribed by Mrs. Richards, "Before the purchase is made, the labor involved in caring for it should be considered."

Another of Professor Seager's laws is that of "least social cost." It is inconsistent to belong to the Consumers' League, or to demand union-made stoves, and at the same time require at home services and refinements that can be attained only by soul-killing work. We want tasteful serving of food, but there are many people who only need to count the number of dishes per person required to serve their breakfast and then either cut down their demands, or hire more help. Wells, in New Worlds for Old, paints a pleasant picture of the future and one phase is the new feeling of responsibility about making work. Why should not each person put his bed to air, and clean the tub after his bath; in short, leave things as he found them? Only a housekeeper can really appreciate the saving of labor which would result.

As with the present industrial conditions it is unwise for the average family to invest much capital in a house from which they may at any time be called by a change of work on the part of the bread-winner, it seems inevitable that most families should live in rented houses. The chief drawbacks to this are, first, that tenants are apt to be careless with rented property; second, that owners, on that account, put in cheaper material; and third, that this finally reacts on the tenant, who finds it harder and harder to find a well-built, small house or to get proper repairs made. Then, even good tenants are apt to become care-

less, and the children grow up without the love and care for the home which they should have.

The general subject of food, the necessary amount and composition per person per day, the proper preparation and the general waste of it in America are so much written about that there should be little left to say. Unfortunately one sees in print so much nonsense on the subject that it would be wise for the novice to ignore most magazine and newspaper articles and to pin her faith to United States Department of Agriculture publications and to books by real authorities. One phase of the subject which few writers touch upon, but which causes much trouble and expense in homes and institutions, is the interpretation of "one man's meat is another man's poison," as meaning that children should not be forced to eat anything they do not fancy. Granting that there are exceptional cases of idiosyncracy which must be allowed for, it is evident from observation that children can be taught to eat what is placed before them and finish the amounts of food they have taken. If one may judge from old families which have produced well-known citizens in each generation whose members consider a well-cleaned plate a family trait, it would seem that this training is as good for character as for economy. It is surely extreme for each of five members of a family to require a different kind of breakfast food.

Mere attention to percentages of nutrients or calories of energy is not enough to prevent waste in food, unless one is catering to out door laborers whose appetites make any good food welcome. It seems to be proved now that the digestive juices are only secreted properly when the food has an attractive flavor and is "interesting." This accounts for the lack of satisfaction that is often felt when one has left a dull table even when there was more nourishing food provided than could be eaten. Professor Chittenden has shown that even dogs require variety and interest to make them digest their food—how much more human beings.

Little needs to be *said* about waste in clothing, though much remains to be *done*. Professor Marshall has said "Everyone who changes the material of her dress simply at the bid of fashion sins against the spirit of art, but she also probably adds to the wreck of human lives that is caused by the hungry pining for work." If people who wear their clothes while in style and then give them away could realize the lowering of artistic feeling and general loss of self-respect caused in the poor by wearing grotesque, overtrimmed creations when they are sufficiently

out of style to be noticeable, the said wealthy people might hesitate to wear such clothes even when they were in style.

According to the law of variety, "The ideal which the economic man should have in mind is that of carrying each kind of consumption only to the point where it becomes less pleasurable than another form of consumption that may be enjoyed at the same expense." Hence, to live reasonably a person must study his income of time and money as a whole and apportion it equitably among his needs; rent, food, clothes, culture, etc., not forgetting health and happiness. Mill says there are no laws other than those of human enjoyment, but as one looks at homes of different standards, there seem to be the greatest divergences in relation to the standard of happiness. Too many homes seem merely a tread mill with no recognition of this standard, either from the outside world or its representative, the man, who still too often considers the home as something for which he is paying and which must be run for his convenience. We are just now in a peculiar transition stage in regard to the position of women but there will be a step forward when more women fully exercise their instinct of workmanship and refuse to be merely conspicuous idlers or wastefully dressed lay-figures designed to advertise their husbands' wealth.

Much lack of happiness for household workers comes from lack of recognition. Most men have hope of advancement at some time, but what chance of it is there for the housewife? It should be made up to her in praise for successful efforts. Some men go on the principle of never mentioning the quality of a dish unless it be bad. Mrs. More in her book Wage Earners' Budgets gives as typical the woman whose highest praise of her husband was "He has never called me a liar, nor I him." This shows plainly the pitiful lack of joy in personal relations with sympathetic human beings. We need to remember this in our consideration of household service. A very competent, well-educated maid said, "I don't want to work in a place where there is no one to tell me my work is done right."

Everyone admits the beauty of a well-ordered life, while there are few of us who have not lamented the jarring elements in the home life of some of the world's heroes. With higher ideals and wider knowledge, cannot the housekeepers of America set the pace in the advance toward well-ordered and beautiful lives for all of us?

HYGIENE, DRESS, AND DRESS REFORM.[1]

DR. DUDLEY A. SARGENT.

Like all problems in hygiene which this generation is called upon to solve, that of suitable clothing, especially for women, has gained in complexity as conditions under which we must live and work have become more involved. Just as city officials and scientists are working out schemes for better public hygiene, as doctors and bacteriologists are applying their knowledge of germ life to preventive medicine, so each individual should feel a personal responsibility in appropriating all this enlightenment and in scientifically regulating questions pertaining to personal hygiene, including dress.

The fundamental principles governing hygienic dress—such as underwear, kinds and weights of materials, supports, garters, corsets, boots, tight sleeves, and collars, remain the same under normal though varying conditions because the same great physiological laws are involved, laws which pertain to the body as a functioning machine, an active life force which strives to go on and do its work even when we maltreat the body so that it is hampered and impaired. Our motto ought to be "clothes are made for the body, not the body for clothes," and we should by the test of usefulness and hygienic value, first, and of ornament and adornment afterwards, apply our judgment to modes of costumes. And as for reform, there will never be a radical change in dress accepted by women which renders them ridiculous, or unsuitably accoutered for daily tasks. We must look in some other direction than the bloomer costume or Roman togas for a solution of the problem. Let us not soar into impractical exhortations to the refined matron to discard skirts and go shopping in the Turkish woman's costume, or to the business girl to drape herself for a day at the typewriter in the becoming scarfs of the Greek maidens. We have present conditions to deal with, present occupations to consider, and present demands to supply, and to do all this we must study our subject according to the laws of physiology, sociology and economy. There is

[1] Read at the Boston Meeting of the American Home Economics Association, January, 1910.

one idea which the physiologists are impressing strongly upon us, and that is the principle of the unity of the body as an organism; the principle of the interaction and dependence between one function and another. This idea is fundamentally connected with our subject at almost every point from which we may take up our discussion—as for instance, the relation of posture, and its resulting effect on internal organs, to types of support, as corsets and suspenders; or the effect of constriction of the waist or chest in impeding digestion and circulation.

Our body, then, is a functioning machine which must have heat in order to work; and the skin, with its pores, and hairs, and various glands is its real dress, and the natural regulator of our bodily temperature. But under our climatic conditions, clothes are necessary to aid this function, as well as to satisfy the dictates of modesty and fashion. We find in many of the older books on hygiene such quotations as this, "From the standpoint of the hygienist, then, clothing is intended to preserve an equable temperature about the surface of the body." When we remember that 80 per cent of our food is needed to keep up animal heat, and that 70 per cent of the loss of this heat is from the skin, we realize the necessity of suitable clothing to assist the important skin functions of holding in the heat in cold weather, and of giving it off in warm weather. These two points are the ones to consider in choosing proper underwear. As Dr. Black says,

> Undergarments are the ones upon which reliance should be wholly placed for the proper protection of the body. The warmth of the body is far more efficiently retained when the protecting covering is next to it. Outside clothing should be worn to keep penetrating winds from the surface of the body, so that ventilation and radiation may go on in a normal way.

It is almost impossible to dictate in any autocratic fashion the kind of undergarments to wear, since individuals differ so radically in their needs and preferences. Still, there are laws to guide us in our choice, laws which we must heed to gain the greatest comfort and efficiency. Nature's clothing for her animals is uniform and unconstraining, varying with geologic and climatic changes in temperature. And from nature we can cite many familiar instances to demonstrate the principle that it is not the weight of a garment as much as its texture, nor the material itself as much as the manner of wearing it which constitutes its hygienic value. When pussy dozes on the doorstep in the wintry sunshine, he fluffs out his fine coat of fur and makes a loose but thick covering; when the fowls go to roost they ruffle out their feathers, and to the unthinking seemingly invite the chill of winter to penetrate

their plumage. The old farm horse that jogs into town on a market day is as furry as a toy lamb. In nature, the colder the weather, the more loose and erect the covering of fur or hair or feathers becomes. This is to ensure a protection that shall hold in its meshes layers of air, for dry air is a poor conductor of heat, and therefore the body heat of the animal is better retained. This method combines the greatest warmth with the most ease and lightness. Each layer of fur or feathers forms a wall within a wall, holding warm air between them. The Eiderdown duck, inhabiting the cold regions, has the lightest, softest coat of feathers imaginable, yet what a perfect protection it has in the air enmeshed in those fluffy strands.

The ideal texture for warmth, then, is a material which has a thick, loose, texture with fuzzy nap, such as wool; while the manner of wearing it, since it is to supplement the skin, is naturally next to it. But as already intimated, it is unwise to prescribe woolen underwear for all. Some skins are hypersensitive to the irritation of wool, while some function so vigorously that they do not need the aid of wool. And here we see the benefit of preserving the natural non-conductive quality of the skin, by keeping up its "tone" by hygienic measures such as exercise, bathing and rubbing, so that it will accustom itself to quite wide ranges of temperature and render unnecessary constant changes of underwear with every fluctuation of the thermometer. Modern science has succeeded in imitating these necessary qualities of the texture of wool in many ways. Cotton is made up with a wooly, fleecy nap, with plenty of air space in its loose texture. Cotton and wool are so combined that the side next the skin is the cotton weave, while the reverse is wool; or the two materials are mixed as in Merino underwear, softening the irritating qualities of wool. When on the other hand, we consider underclothing for warm weather, and its importance in helping the skin regulate our temperature, and keep us in a normal condition, we find just the opposite qualities from those considered are required. Smooth, thin fabrics are most appropriate, such as linen, sheer cotton and silk. To sum up, then, we can say that the virtue of underclothing may be principally estimated by the conducting or non-conducting properties of the material. A linen shirt takes warmth and moisture from the body and discharges them rapidly into the surrounding air, therefore it is a garment desirable for a hot summer day. A woolen shirt takes heat and moisture slowly from the body and discharges them slowly into the surrounding air, therefore it is a suitable garment for a cold winter day.

From these principles each one should work out her individual preferences and find the type of material best suited to her body, considering her age, vigor, occupation, and health. And let the covering be as uniform over the body as possible, remembering that if one part is overclad and another thinly covered, a lack of equilibrium in the temperature renders the organism weak, liable to colds from draughts and sudden changes, coughs from exposure, and a whole train of evils from cold, wet feet due to inadequate foot wear. City pavements and the bettered condition of country sidewalks in winter have rendered heavy rubber boots and such footwear almost unnecessary. And yet how often women go to the other extreme and appear in mid-winter in low cut, thin-soled shoes, hardly more than slippers. For warmth and protection, overshoes lined with a wooly material are the best things, and can be worn over low shoes, thus giving free play to the ankles and ventilation to the foot. The noxious rubber boots that children and adults used to wear are on the wane. Of all the cold, uncomfortable forms of footgear those certainly are the worst. Unpliable, ill-ventilated, heavy, half the time full of snow and leaking, what a protection for a child's feet! Stout leather boots, with rubbers and gaiters, if necessary, are the hygienic modern substitute.

The question of the best kinds of boots and shoes is almost exhaustless. We all know that broken arches, flat foot, weak ankles and other pathological conditions require special shoes to assist the muscles and bones, and to correct deformities. But normal feet, even when constantly in use, standing or walking, can be so clothed that the elasticity of health can be retained, and corns and bunions and such insults to our feet be unknown. To maintain such a normal condition shoes must be made on lines conforming to the shape of the foot, with a low, rather broad heel, at the heel, not under the instep, a sole sufficiently thick yet pliable, and with enough width and length to allow for expansion of the foot in standing and the action of the muscles and bones in walking. Who was it said, in choosing a pair of shoes, to find a size that fitted and then buy a size larger? This may not be neccessary, and in fact too loose a shoe chafes the foot, but too tight a shoe causes miseries, and an ill fitting or foolishly stylish shoe is the cause of much of the ungraceful walking and forced unnatural body positions assumed in the attempt to maintain an equilibrium.

We can return to the thought of the unity of the body again in considering the bettered conditions for living and the resulting changes in ideals of hygienic dress. Compare the facilities for bathing, to take

but one example, that are offered in modern American homes, with the lack of such opportunities fifty years ago, and consider their tonic effect on health and influence on dressing. The crash bath towel now takes the place of the old red flannel shirt, and the change is for the better. Warm houses make heavy indoor clothing unnecessary, and therefore the skin is functioning better all the time, and more ready to respond to the stimulus of outside cold. The habit now so popular of sleeping out of doors, and with windows wide open to the dreaded night air of our grandmother's time, so thoroughly oxygenates the lungs and blood and internal tissues that great resistance to the cold is built up, and heavy, clogging clothing is dispensed with. Out door exercises and sports have largely freed girls and young women from sleeves so tight that they could not swing a golf stick, and from trailing skirts for daily wear. We have therefore to thank many phases of modern life, and especially practical lessons from physiology for the adaptation we can make in our dress which renders it more comfortable, light and serviceable.

It is amusing and enlightening to read in books on hygiene published some years ago warnings and exhortations on dress reform. Who does not remember family portraits of little children clad in very low neck, short sleeved dresses—a costume seen but rarely on infants now, and then only on the most torrid mid-summer days. This fashion was much decried by hygienists, but the true physiological explanation of the harm done was not shown till later, when it was found that an infant's body radiates more heat in proportion to its size than does an adult's, and that because the mother could stand the drain on vitality of such a fashion was no reason that the child could. Perhaps the greater prevalence of croup in those days may be traced to this cruel custom. Conserving the body's warmth means greater health and growth to the child. Again, we come to references to hoop-skirts, denouncing a mode of dress that holds the warmth of the clothing several feet away from the body! Then there is a lurid dissertation on the evils of tight lacing thirty years ago, depicting the pale, emaciated maiden, whose form was wasting away in her stays. Against the woman who sweeps up the filth and dust of the streets as she trails through them with draggling skirts, the authors unite in their denunciations.

Some of these evils have gone, some are on the wane or disguised, while some are still boldly displayed. But in regard to them all, those who urge reform do so on authority which was not to be had even a

few years ago, the authority of scientific research, careful deductions, and keen knowledge of physiological laws. There is less reason than ever, now that this knowledge is so freely given her, for woman to moan that she "was born to suffering." To quote Dr. Black again,

> Nature's gifts are invariably adequate and complemental. She never makes a requirement for which there was not *originally* sufficient provision. All the insufficiency observed is of *art* not of *nature*. In the air breathed; in the sunlight absorbed; in the exercise taken; in the clothing worn, women are far more the child of vicious art and custom than man. Until they purge themselves of these evils, take adequate outdoor exercise, and protect their bodies with clothing more in accordance with the requirements of nature, their plea that they are born to greater suffering then men, will have only an apparent foundation of truth.

As has been said, the economic conditions of woman's life at the present day are utterly unfavorable for a return to classic, medieval or oriental modes of costume. She must work out her dress reform in relation to the demands of living We have shown how some of the hygienic conditions are favorable to this reform, and there are still others of a more economic nature. Better and cheaper materials are constantly being manufactured; ready-made dresses, which save the busy woman hours over her needle, are available from reliable shops; boots and shoes are made on more hygienic lines, if she will but avail herself of these models; the greater variety, better make and fit of corsets, underwaists and supports make it possible to find a garment which will not injure her physique, if she will but train her muscles to do their normal work in support and poise. Improvement in dyes in stockings and stuffs render poisoning from that source very uncommon, while the remarkable popularity of the light weight walking skirt, and the comfortable shirtwaist, make it a ***moral*** obligation of every thinking woman to avail herself of the best which her generation offers, and show forth her life in all its efficient strength.

Dress reform, in other words, must start in intelligent understanding of, and in sympathetic conformity to, the present age, without sacrificing principles of good health. As in all reforms, in religion, in education, or in dress, some elements of the truth are always with us. We can never reach a perfect system, because higher demands and higher ideals are constantly developing as we force a wider opening in the crack through which we "see darkly" into the mysteries of body, mind and spirit. The elements are here, then, in the form of the hygienic and economic conditions already mentioned. It is the duty of those who recognize these opportunities to create a demand for them,

for the human race is a great deal like children, they do not know what they want until they see it. But if the right ideal is constantly held up for women to see, they will, slowly perhaps, begin to want it. The suffragettes are working on this principle, keeping before their womenkind ideas of equality and social progress until women shall *want* them, heart and soul. The true "woman's rights" are rights to good health and strength, and a release from conditions that restrict her bodily as well as her social development.

There is everything to be said in favor of the fashionable "one piece dress" provided the undergarments, especially the corsets, if worn, are properly made. Such a costume gives great artistic unity to the figure, does away with awkward belts and untidy waistlines, and permits ease and grace of carriage through the equal distribution of the weight of the garment. But this fashion *caricatured*, or carried to an extreme, as it so often is, negatives the very points it ought to emphasize. The corset is worn to impale the legs and flatten the back, the waist is constricted, and the beautiful unity and strength of the trunk is broken. Often the bust effect is over emphasized, especially on slender women, and combined with the popular high heels, the whole effect of the balance and poise of the body is thrown out of gear. This is what happens to a good style in the hands of the ignorant, and it remains for dressmakers, tailors and department stores to see to it that they create a demand for the right rather than the wrong type of this fashion. The high-waisted fashion of last winter suffered a similar fate in the hands of its maltreators, its caricaturists. Instead of giving soft, free lines down from the raised waist, tightly fitting underslips were almost universally worn to maintain the "figure," and more than often the outer skirt was of the same tightness, necessitating the long corsets, and producing a painful "willowy-ness." The overskirt style now in vogue seems to be tending to swathe up the thighs. Kind modistes, forbear to draw the loops more tightly, lest we go mincing along like wound up toys.!

Dr. Joel E. Goldthwait, in a recent article in the *Medical and Surgical Journal* has clearly and convincingly demonstrated the relation between poise and bodily efficiency, showing how the relative positions of the internal vital organs are maintained under the normal conditions of an upright posture. Such a maintenance means the well-being and efficiency of the organism, while the disturbances caused by faulty attitudes due to weakness, carelessness and willful perversions of fashion, mean sickness and loss of vitality. His study of two popular types of

corsets is particularly significant. The old straight front model, he concludes, was, for all its faults, better than the present flat-back model. The former, while increasing the natural inward curve of the lower back, nevertheless preserved the natural protection afforded to the pelvic organs by the shelf-like projection of the sacrum, and also maintained the forward downward tip to the pelvis, so necessary, as he shows, in keeping the delicate pelvic organs in the pockets of protective muscles and fat designed for them. This style also produced a hyperextension of the upper spine to counteract the increased curve below, and this caused a beneficial expansion of the chest aided by the freedom of the low cut of the corset. But with the "flat back" type these conditions are reversed; the natural lumbar curve is destroyed, and the pelvis, tipped upward and backward, is deprived of its natural protection, the sacral curve. In such a position the weight of the abdominal organs tends to rest on the pelvic organs, causing painful displacements and nervous symptoms. In addition, the upper curve of the back is thrown more forward, to keep from falling over backwards, and consequently the shoulders are rounded and the chest flattened. The strain on the body resulting from such conditions prevents its doing its most efficient work.

Nature has a distinct architectural plan in building the body, and it is imperative to choose such a form of corset as will not interfere with this plan, and which will not, through ignorant and perverted tastes, make of you a "wasp," a "trussed fowl," a "stuffed goose," a "weasel," or any other kind of an animal. If you cannot by good health and exercise train your muscles and bones to support your bodies; if on account of over development, sagging abdomen, and clumsy hips some restrictions are necessary, choose those forms which will have a corrective tendency rather than those which will merely increase your deformity. A pliable waist will keep the figure in shape without constricting it, and will give the muscles an opportunity to recover their tone. For we know that if we delegate to any form of corsets or brace the duties which should be done by the muscles, they degenerate and depend wholly on the support.

Dress reform! Do not let it call up a vision of short hair, knee skirts, and high laced bicycle shoes; nor yet of mannish cravats, and severe coats and shirts. There need be no such radical changes, nor any perceptible departure from a womanly, becoming, nay, even frivolous costume. The peripatetic waist-line, as variable as the isotherms of the temperate zone, can still move up and down, but don't let the internal organs be moved along with it! Keep the body itself right and upright, clean and vigorous, free and strong, and reform will have been gained.

THE HOUSEHOLD ARTS BUILDING, TEACHERS COLLEGE, COLUMBIA UNIVERSITY.

The School of Household Arts, Teachers College, Columbia University, has recently occupied its new studio and laboratory building, and some account of the equipment of this university technical school for women will be of general interest.

The building joins the main college building on the east, and is 160 by 60 feet in ground area, six stories high, with 80 rooms and a floor area of an acre. It is devoted exclusively to the purposes of the School of Household Arts. The basement, which is quite above ground, contains the laundry, laboratory, a large laboratory for practical courses in household administration, and a testing laboratory and locker room. On the first floor are offices and lecture rooms, and the household and industrial arts reading-room, for which a special library of several thousand volumes is in process of formation. The department of foods and cookery occupies the second floor, with three large cooking laboratories, besides an institutional cooking laboratory, an experimental cooking laboratory and a table service laboratory. The third floor is occupied by the department of textiles and clothing, with four large laboratories for sewing, dressmaking and millinery. On the fourth floor are located the departments of household chemistry, physiological chemistry, and nutrition with five large laboratories. Additional science research rooms are on this floor and the floor above. The fifth floor contains three household art studios, the textile studio, the nutrition research rooms, and a demonstration apartment of six rooms. Above all is a roof garden 100 by 25 feet in area which promises to be a useful adjunct to the building.

One of the more unique features of the building is the institutional cooking laboratory which forms an integral part of the equipment in the department of foods and cookery. This laboratory, with the adjoining table service room, provides equipment for practice work in the preparation and service of luncheons and other meals to groups, so that the student may receive practice in handling food in large quantities both as regards marketing, preparation and service. The

large quantity apparatus includes units which repeat all the essential parts of the equipment in a hotel or an institutional kitchen. There is a unit French range and a unit gas range, of the types used in hotel kitchens, and in the block with these, charcoal and gas broilers, a steam soup kettle, steam vegetable cooker, steam-table for service, plate warmer, urns and other equipment necessary to complete the installation. The table service room adjoining this large-quanity apparatus is perhaps the most attractive room in the building; it is finished in high carved oak panels decorated with the linen fold design. The room can be arranged either as a family dining-room, with a center table, or as a café or lunch room accomodating forty persons. One problem upon which the department of foods and cookery is now engaged utilizes this room with a service of luncheons one day a week with varying prices.

Another feature which attracts general attention is the laundry laboratory which possesses complete equipment both for hand and machine work. The hand equipment includes fixed tubs, ironing tables and other necessary apparatus. The power equipment includes a wash wheel, centrifugal extractor and mangle, all electric driven, and a steam drying-room, with starch kettles, work-tables and other modern equipment. This laboratory is finished in white tile flooring and wainscoting, and with a class busy upon snowy linen, forms a most attractive sight. This course has already attracted a large registration in domestic laundering and a full class in the conduct of institutional laundries.

The registration in courses which prepare for teaching domestic art and domestic science, the long established divisions of Home Economics at Teachers College, has notably increased this year. There are seventy-seven candidates for the domestic art diploma and one hundred and forty-eight for the domestic science diploma. The newer departments have the following registration: Nurses education, seventeen; household administration, fifteen; and house decoration, one. The domestic art and domestic science curricula were each enlarged during the past year, both in technical and educational courses. The domestic science course has been strengthened by a broader offering in food chemistry and dietetics, and the domestic art course by new courses in costume design. Both curricula now include a new and distinctive course in laboratory methods and practical class room technique. The members of the class discuss details of laboratory management and equipment, and in some cases are given lessons as

if they themselves were children. These courses furnish, therefore, laboratory practice in the topics discussed in the courses in educational method. The experiment has met with very satisfactory results. There are also six graduate students registered for the degree of Master of Arts in domestic science, and one in domestic art. The trade diploma offered by the domestic art department is also attracting women who wish to prepare for positions in trade schools. There are unusual opportunities for those who know the details of trade work and are willing to secure proper preparation for teaching technical subjects.

The offering of the School of Household Arts for next year is considerably increased over that of the present year. Some fourteen new courses are to be given and several new diplomas which have been taking form during the present year, are definitely provided. These round out the instruction of the school as a professional school of university rank for women students, parallel to the professional schools of law, medicine and engineering for men. New curricula are provided in household and institutional administration, in dietetics, in house decoration, in nurses education, and in visiting, nursing and health protection (designed not only for graduate nurses, but also for college women with previous training in biology and chemistry, in preparation for positions as board of health assistants and sanitary inspectors). Another departure is a two-year curriculum for high school graduates, leading to a diploma in applied arts, which is to include cultural subjects, but gives major emphasis to vocational subjects of a practical nature selected from the schools of household arts, industrial arts, fine arts, music and physical education. This applied arts diploma provides a new type of college study for the first two years of a four-year course. It retains the central cultural subjects of regular college course and provides for electives in practical fields which will be of direct value to the young woman as regards professional service or later home life. It gives a well rounded training to that type and temperament to which the classical college course does not appeal, a preparation in one way complete in itself and in another forming a very adequate introduction to later professional preparational for teaching, administration or public service. Another new curriculum is the one-year training in fundamental science and the household arts, including also elementary materia medica and principles of nursing, provided for young women who wish to

enter training schools for nurses, and for which credit can be obtained in reducing the period of training in the hospital.

With its other activities, the School of Household Arts has offered this year a score and more of extension classes which have attracted upward of 400 part-time students, in addition to the 258 students in residence. Besides courses in cooking, dressmaking and the other usual subjects, useful classes have been formed in marketing, care of infants and small children, demonstrations in carving, and one successful housekeeper's conference has been held.

The response from the public in New York, and from the country at large, indicates that the School of Household Arts at Columbia University will, with similar institutions elsewhere, perform a large service for the common good. As one enters the new building, one passes mural decorations which represent woman's traditional domestic industries—weaving, cooking, sewing, candle-dipping, and churning; what one meets within the door expresses the hope of the future.

JOHN STANTON GOULD: A PIONEER STUDENT OF INSTITUTION DIETETICS IN AMERICA.

C. F. LANGWORTHY, PH D.
U. S. Department of Agriculture.

John Stanton Gould, who published in 1852 the results of an extended study of dietary and other conditions in public institutions in the United States, was born in 1811, and died at his home in Hudson, N. Y., in August, 1874, in his sixty-fourth year. He was a member of the Society of Friends. In his youth he received a very thorough education, particularly in the physical sciences, and throughout his life was well known as an industrious student and a writer and lecturer on scientific topics. At the time of his death he was a non-resident professor of Agriculture at Cornell University, a position he had filled since 1869. He had an admirably conducted farm in Columbia County, N. Y., and took an active part in movements for agricultural improvement. For many years he was a member of the State Agricultural Society and its president in 1866. He was a frequent contributor to the agricultural press and interested in politics and in general in public questions. As an example of his writings on agricultural topics may be mentioned his paper on forage crops prepared for the New York State Agricultural Society,[1] which is an exhaustive discussion of the subject from a botanical and chemical as well as from an agricultural standpoint.

Data supplied through the courtesy of Prof. Burt G. Wilder of Cornell University give an idea of Professor Gould's personality and point of view. He states that at a memorial meeting held in honor of the elder Agassiz the 28th of May, 1874, Professor Gould presided and made the principal address. The following statements which he made regarding Agassiz and his power of imparting scientific information in such a way as to prove really useful, without doubt express his own ideas of what is best:

> It was not merely men of science that he was ready to devote time and attention to. I have seen plain farmers who did not know the difference between oxygen and

[1] Trans. N. Y. State Agr. Soc., 32 (1872–1876), pp. 1–90.

JOHN STANTON GOULD.

hydrogen, and who scarce knew the difference between a vegetable and a mineral, go to him to elucidate some point upon which they were puzzled. It was beautiful to see that illustrious man sit down by the side of these simple men, and teach them just what they wanted to know in the plainest and simplest language that could be imagined. He would select such happy phrases, with such adaptation to the intellectual and scientific wants of the person he was addressing as to exactly convey his idea.

Prison reform was a subject in which Professor Gould was very much interested and for many years he was one of the directors and executive officers of the New York Prison Association.

In 1850 the Board of Commissioners of Immigration reached the conclusion that additional information was needed if they were to meet intelligently the great demands which were being made for assisting the immigrants who were coming in large numbers to the United States and who needed, at least, temporary housing and shelter, particularly for purposes of quarantine. They decided, therefore, "to procure a suitable agent to visit the best institutions in our country, who should study the system of management pursued in each, and also seek information in relation to the cheapest and most nutritious kinds of diet, with the most economical processes for their preparation."

Knowing that Professor Gould's attention had been turned to these subjects for many years, the commissioners invited him to collect this information but he was unable to do so at the time and as no other suitable person was available, the project was abandoned. However, the next year when under the joint auspices of the board of commissioners of immigration and the board of governors in the New York Almshouse department it was revived and his services again sought he consented to undertake the work. That he was well qualified for the task entrusted to him, the report which he submitted to the commissioners bears witness. It bears the title: A Report of Food and Diet, with Observations on the Dietetical Regimen, Suited for Almshouses, Prisons, and Hospitals; Also on Heating, Ventilation, etc., with Practical Recommendations, and was published in New York in 1852 by joint resolution of the two boards.

As a necessary part of his investigation Professor Gould made an extended study of the writings of Liebig, Megandie, and other writers on food physiology, and related questions, as well as of work on institution management. His summary of physiology as related to food matters and general data regarding nutrition problems is of interest as it undoubtedly gives an idea of the views which were held at the time.

The contributions of men of science to the solution of alimentary questions, he writes, may be summed up as follows:

The body is continually wasting its substance. Food is necessary to repair this waste. Food is also necessary to support respiration, and to sustain animal heat. The food must be sufficient in quantity and quality to repair the waste of the organs and tissues, and to sustain animal heat.

The higher the external temperature is maintained, the less food will be required within certain limits.

All the organs and tissues are elaborated from the blood. Therefore our food must contain all the elementary principles of the blood. The chief organic element of the blood is nitrogen. The chief supporter of the heat is carbon.

The wasted organic elements are evacuated in the feces, the urine and the sweat; the sum of the nitrogenized compounds contained in these shows the sum of the same compounds which must be received in the food.

Since oxygen and carbon unite in uniform proportions to form carbonic acid, the amount of oxygen absorbed into the system is a measure of the quantity of carbonaceous materials which must be received in the food.

The objects of the investigation which he conducted in almshouses and other public institutions, as stated by him, were to determine:

(1) What is the least amount, and what is the cheapest kind of food by which a prisoner or pauper can be supported so as to preserve his health and strength.

(2) By what process of cookery can the nutriment in any given kind of food be most thoroughly extracted.

(3) To ascertain what collateral circumstances influence either favorably or unfavorably the digestion and assimilation of food.

(4) To ascertain the relative values of all the usual varieties of aliments, with view to the establishment of a scale of dietetic equivalents. For example, if a given number of ounces of beef will support a man in his full vigor for twenty-four hours, how many ounces of mutton, pork or potatoes will support him in equal vigor for the same time, or how much of rice, peas or beans will be equal to a pound of potatoes in health and strength-giving-properties.

(5) The most effectual means of preventing peculation and waste of food in large institutions.

(6) To ascertain the influence of the various modes of warming and ventilating and the effect of different trades and occupations on the health and longevity of prisoners and paupers.

(7) To ascertain the most profitable means of employing paupers and prisoners consistently with their health and well-being.

(8) To learn any other economic or hygienic improvement in the various institutions of the country which might be profitably applied to the institutions under your care.

To sum up the whole matter, it was my intention to learn how prisoners and paupers could be supported, with the least burden to the community, and with the greatest benefit to themselves.

In carrying out his investigation, Professor Gould apparently visited all of the following institutions and perhaps several others: Emigrant Refuge, Ward's Island, N. Y.; Nurseries, Randall's Island, N. Y.; New York Almshouse; Penitentiary, Blackwell's Island; Philadelphia Almshouse; Moyamensing Prison, Philadelphia; Eastern Penitentiary, Philadelphia; Philadelphia House of Refuge; Maryland Penitentiary; Baltimore Jail; Baltimore Almshouse; Washington Jail; Penitentiary of the District of Columbia; Washington Asylum for the Poor; Boston Lunatic Asylum; Boston House of Correction; Boston Almshouse; Massachusetts State Prison; House of Industry, Boston; Suffolk County (Massachusetts) Jail; Rhode Island State Prison; and the Providence Almshouse. Data were also summarized regarding U. S. Army and Navy rations and information quoted at length from the extended study made in Great Britain of the Pentonville prisoners, which was carried on some years before Professor Gould's own investigation was undertaken. In the American almshouses and other public institutions studied, information was collected regarding the kinds and amount of food served, the bills of fare, the way in which the foods were prepared, and other related matters, and the data thus gathered are discussed at length.

According to Professor Gould's summary, the cost of provisions per week ranged in the different institutions which he visited from 28 cents per person in New York State Prison to $2.07 in the Boston House of Correction, and the total weekly expenses per person from 70.2 cents in the New York Almshouse to $2.98 in the Washington Penitentiary. As might be expected the the materials served varied greatly in the different institutions but in most cases the breakfasts and suppers were very simple and the dinners more generous.

Professor Gould concludes that the New York institutions compared favorably with those which he visited in other cities and towns and he states that therefore it was not possible for him to suggest many improvements. He states further that the New York institutions were characterized by economy, cleanliness, comfort, and good order, and that the suggestions which he made, on the basis of his extended study of the subject, had to do more with matters of detail than with general recommendations.

It is interesting to quote the weekly bill of fare which he recommended for the Ward's Island Emigrant Refuge as it not only shows what he on the basis of his investigations, considered desirable, but

also gives an idea of food customs of the period as they were reflected in dietaries in public institutions.

Breakfast—Half pound Graham bread, one herring and rye coffee.
Supper—Four times a week, mush and molasses (five ounces of indian meal and half gill of molasses; three times a week rice and molasses (four ounces of rice and half gill of molasses).
Dinner—Sunday, rice hash (three ounces of meat and four ounces of rice to each person). *Monday*, baked pork and beans, five ounces pork, and five ounces beans to each person. *Tuesday*, six ounces corned beef, eight ounces of potatoes, twelve ounces corn bread. *Wednesday* [*Thursday* and *Saturday*], six ounces fresh beef made into soup, twelve ounces of corn bread, and eight ounces beets, carrots, or turnips. *Friday*, four ounces salt fish, twelve ounces potatoes, and twelve ounces corn bread.

Professor Gould compiled data published by Liebig, Prout and Pereira, regarding the composition of foods, and, in accordance with the custom of investigators at this time, on the basis of such data he calculated the amount of nitrogen and carbon furnished by the dietaries which he studied. According to his results, the weekly bills of fare in the different institutions supplied per person per day from 9.23 ounces nitrogen in the case of the Boston Almshouse to 22.26 ounces in the case of the Blackwell's Island Penitentiary, and 58.58 ounces carbon in the case of the Washington, D. C., Almshouse to 124.16 ounces in the case of the Massachusetts State Prison.

On comparing of these elements [nitrogen and carbon as he calculated that they were supplied by the different diets], it will be seen that there is a tolerable approximation to uniformity among the almshouses, and among the prisons, and a wide difference between the almshouses and the prisons, the diet in the latter being much fuller than in the former.

It is of course an easy matter to compute from Professor Gould's recorded estimates regarding the nitrogen content the amount of protein which the dietaries supplied. Unfortunately, it is not possible to compute the fat and carbohydrates from the values given for the carbon content. However, in some cases it would be possible from the recorded data regarding kinds and quantities of food served in the public institutions to compute in the terms commonly used at present time the nutritive value of the rations supplied should this seem desirable for comparison with later work.

The characteristics of potatoes, rice, wheat flour, corn meal, and other staple foods which were used in the different institutions are discussed in the report as well as the proportions in which different

foods might be used to replace each other in the diet. This was one of the subjects on which Professor Gould regretted that he could not secure more adequate and accurate data. As an example of the practice in institutions regarding the substitution of one food for another the following data which were obtained from the warden of the Eastern Penitentiary in Philadelphia are of interest:

> The beans, rice and hominy, etc., are served alternately, and have been resorted to as a substitute for potatoes during the late and present high price of that article. When abundant, or not over 50 cents per bushel, we serve them nearly every day at dinner, varying by an occasional mess of beets, parsnips, turnips etc. We do not use indian meal in any other form than hominy, and that once a week.

The importance of good methods of cookery was recognized as well as the need for instruction in such matters.

For the New York Institutions Professor Gould makes the following recommendations:

> Four or five classes of ten each, should be selected for experiment on the effect of various diets and modes of cookery. I recommend that the object of the first set of experiments should be, to ascertain how far the tables of dietetic equivalents founded on the relative amounts of nitrogen and carbon in each article of food, as determined by chemical analysis, can be relied on as a guide in practice.

He also devoted a great deal of attention to the study of methods of cookery in the different institutions which he visited and from Doctor Bell of the McLean Lunatic Asylum at Boston secured interesting data regarding an experimental study of the yield of bread from different brands of flour. In his report Professor Gould discusses bread making at length and gives full directions for mixing, kneading, and baking.

> It is invariably true, [he writes] that the excellence of bread will be in the exact rates of the weight obtained from a given quantity of flour. The excellence and the nutritive properties of flour depend very much on the amount of gluten it contains; and it is found, on analysis, that different kinds of wheat vary greatly in the amount of this substance contained in them.
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> From what has been said, it appears that the conditions on which the making of good bread depends, are as follows:
>
> First, Flour rich in gluten and sugar; second, lively yeast; third, the temperature of the sponge should be kept from 68° to 77° F.; (fermentation will not go on below 60° and a temperature higher than 120° F. arrests it); fourth, thorough kneading, care being taken not to break the dough, since that permits the escape of the gas; fifth, to check the fermentation by baking before the development of acetic or lactic acids commences; [and], sixth, if these acids are accidentally formed before baking, to neutralize them with soda or some equivalent alkali.

In view of the great interest which had been aroused a few years before by Dr. Sylvester Graham regarding coarse breads, it is not surprising to find that Professor Gould believed that they were especially worth the attention of the managers of public institutions. He also directs attention to the value of corn bread and to bread made from rye flour and corn meal.

As regards economy with respect to bread, it was his general conclusion that it was cheaper to bake bread in an institution than to purchase it ready baked.

In connection with his work Professor Gould endeavored to collect data regarding the gains and losses in weight of inmates of public institutions, as he realized that this was a matter of importance in judging of the adequacy of the diet. In only a few cases, however, was he successful as such records were not generally kept.

Professor Gould realized the important relation between the kind and amount of food and the amount of physical work performed. This fact may be gathered from his recommendations regarding the rations in New York public institutions. He says in this connection: "For the almshouse at Blackwell's Island, I recommend for non-working paupers, the same bill of fare as already laid down for Ward's Island. For working men, an addition of 33 per cent on all articles except bread for dinner."

He pointed out the dangers of resorting to poor and inadequate diet as a primitive measure and in this connection cites data included in an early report on prisons.

"We are told [he writes] that in 1822, the directors of the Millbank Prison, containing eight hundred prisoners, in compliance with a popular demand for severe punishments, reduced their diet to eight ounces of bread per diem, and a soup made in the proportion of one ox head to every hundred male prisoners, and the same to one hundred and twenty females. This amount of food, for one week, gives 20.41 ounces of carbon and 3.24 of nitrogen."

"A general decay of health was apparent, but the scurvy did not appear till January, 1843. The cases of disease increased rapidly, and on the 28th of February, 118 were sick, and on the 10th of April, more than 400."

Professor Gould's appreciation of the importance of a proper relation between nitrogenous and non-nitrogenous foods is shown by his commentary on the above, for he states that he had no doubt that these prisoners "might have kept in tolerable health, even with this

small supply of nitrogen, had the supply of carbonaceous food been increased sufficiently to supply the waste from respiration."

Professor Gould was a believer in system in public institutions, as is evidenced by his recommendation for "the enactment of code of a regulations for each institution, to be printed and placed in the hands of each person employed, in which the duties and responsibilities of each officer should be distinctly laid down, and specific directions given for their conduct in various emergencies."

He also advised "that a book should be kept at each institution, in which the following facts should be registered in parallel columns: First, name of pauper or prisoner; econd age; third, height; fourth, weight on admission; fifth, occupation before entrance; sixth, occupation after entrance: seventh, capacity of the chest; eighth, weight on the first day of every succeeding month."

The importance of sanitary conditions was fully recognized by Professor Gould and quotations follow from his discussion of hygiene and its important relation to public institution problems.

> The breathing of pure air is one of the first and most indispensable conditions of health and vigor. . . . Cleanliness of the person is of the utmost importance for the preservation of health. . . . Exposure of the surface to the direct rays of the sun, is another of the conditions on which health is preserved. We are unable to explain the rationale of the sun's action, but we know that the rays of the sun are capable of inducing intense chemical action, and it is probable their presence is able to determine some of the wonderful processes of vital chemistry on the action of which the integrity of the system depends. . . . Care should be taken, that the food is sound and wholesome.

As a whole Professor Gould's investigation is one which would be a credit to any investigator since it shows an appreciation of the factors involved and their relation to each other and to the general problem Moreover, it is characterized by a thoroughness and attention to detail which is remarkable. Particularly noteworthy is the mental attitude of the observer. No detail of kitchen management is too small to arouse his interest and, indeed, the most marked characteristic of the report is that it so clearly shows that "inquiring mind" which is a prime requisite in any investigator.

It is a proof of the value of his report that it is useful to students today not only for the data which it supplies regarding conditions as they existed in public institutions in the United States more than fifty years ago, but also because it so intelligently discusses institution management with relation to food and other conditions, and supplies so much which is of permanent value.

ADELAIDE HUNTER HOODLESS.

Born February 27, 1857; died February 25, 1910.

Adelaide Hunter was born on a farm near St. George, Ontario; she received her schooling in St. George, and in 1880 married John Hoodless of Hamilton, Ontario.

In 1891 she became interested in the Hamilton Young Women's Christian Association work and especially furthered its efforts to teach girls better methods in household affairs. Under her presidency the Hamilton Y.W.C.A. opened the first public school domestic science classes in Ontario, and in 1900 established the Ontario Normal School of Domestic Science and Art in the same city. Meanwhile in 1894 she laid the claims of household science before the National Council of Women in an able speech, and was made chairman of its standing committee on household science. This office she held until 1901 and through it was connected with the development of household science in every Canadian province which has taken it up.

In 1897 she helped the women of Stoney Creek, Ont., to organize a club which developed into the Women's Institutes of Ontario, and gave them their motto "For Home and Country." In 1894, too, she carried her visions and plans and services to Hon. G. W. Ross, then Premier of Ontario, and to such good purpose that Ontario is today the banner province in Home Economics. For many years she was unofficially attached to the Department of Education, gave it loyal service in the cause which lay nearest her heart, and became a recognized authority on woman's training for the home, in both Canada and the United States.

In 1901 she carried more visions to Montreal with the result that Sir William MacDonald built and equipped two buildings at the Ontario Agricultural College at Guelph—Macdonald Institute and Macdonald Hall. She was a member of the institute staff and lectured regularly to her "Macdonald girls" Recently her interest embraced industrial education for girls, and she died while speaking on the subject to the Toronto Women's Canadian Club.

Mrs. Hoodless believed that "no higher vocation has been or ever can be given to woman than that of the homemaker and citizen builder,"

and she was an able and persuasive advocate of her belief. In the midst of her own rich and full home life, she did noble pioneer work for homemaker education in Canada; its present development is in large measure due to her tireless promotion of its claims and the scope of her ideals; and she laid her work down in the middle of plans for its greater development.

In the Home Economics Association where, as in all similar organizations, the members find mutual inspiration in social contact as well as in serious conference, Mrs. Hoodless' attractive personality will be greatly missed.

MARY URIE WATSON.

A MODEL FOR BRANCH ASSOCIATIONS OF HOME ECONOMICS.

We reprint below a copy of the circulars, recenty used by the New England Home Economics Association as they furnish an excellent model for the formation of such branches.

The chairman, Miss Sarah L. Arnold, has furnished a few words of introduction.

—ED.

The organization of the American Association has paved the way for smaller groups which can not only do effective work in the various centers, but can derive great advantage from such association.

We found a ready response to the circular calling for the New England Association. Teachers in public schools and in private schools, settlement workers, housewives, and others interested in general education or in social work made up the company which assembled at the first meeting. It was evident that we had general common interests, and that at the same time each placed special emphasis upon some one phase of the work. It was therefore deemed wise to arrange smaller conferences for the study of specific questions. This would maintain the enthusiasm and interest of individuals, would occasion informal meetings, and supply material for larger conferences.

The response thus far has been generous and enthusiastic. We hope soon to make a more definite report of progress.

Even in its youth the Association has served as host to the American Association at its recent meeting in Boston. This meeting proved of incalcuable benefit to the younger and affiliated association. Already the experience of the New England Association leads us to believe that the organization of such groups, however small, in many sections of the country would increase the enthusiasm for the cause and provide many advantages for the individual members—SARAH LOUISE ARNOLD.

[Reprints of the Circulars.]

NEW ENGLAND HOME ECONOMICS ASSOCIATION.

Chairman.
Miss SARAH LOUISE ARNOLD,
Dean of Simmons College,
Boston, Mass.

Secretary-Treasurer
Miss ISABEL F. HYAMS,
26 Wales Street,
Dorchester, Mass.

MEMBERSHIP NOTICES

The New England Association of Home Economics hopes to include in its membership all New England men and women who are interested in raising the standard of home life and in extending the knowledge of Home Economics. The membership fee is fifty cents. This entitles the member to join conferences and to attend all meetings of the Association.

Will you not become a member and ask a friend to join the Association? Enclosed are membership forms which may be sent with stamps or with a check to the Secretary of the Association, Miss Isabel F. Hyams, 26 Wales Street, Dorchester, Mass.

The next meeting of the Association will be held at the Institute of Technology, corner of Clarendon Street, 525 Boylston Street, on Saturday, December 11, at 3 P.M. Subject, Home Economics as a Social Force. The meeting will be addressed by Miss Alice Higgins, Agent of the Associated Charities of Boston and Miss Winifred Gibbs, Agent of the New York Association for the Improving of the Conditions of the Poor. If time allows, the claims of the housewife will be presented by a member of the Association.

Mrs. Richards will present plans for the reception of the American Association.

You are invited to attend the meeting.

MEMBERSHIP BLANK NEW ENGLAND HOME ECONOMICS ASSOCIATION.

Please enroll {me / us} as {a member / members} of the New England Home Economics Association. {I / We} wish to join the following conferences

{I / We} enclose $ for membership dues beginning

Name.....
Address.....
Position.....

PLAN FOR CONFERENCES

It has been suggested that the New England Home Economics Association should be divided for specific work into conferences. Each conference would be made up of members who express a desire to study some particular problem. These conferences would be under the direct leadership of a chairman, would meet at such intervals as they might wish, and have independent plans for investigations, study, or simple conference. There would be no limit to members. A small group, for exam-

ple, might confer about a tea-table, while larger groups might gather more formally to discuss a matter in which they are interested. The chairmen of the conferences may be called upon to report at the general meetings.

The following conferences have been suggested. Please indicate your choice of one or more in returning your application for membership.

(1) Public school programmes in Home Economics.
(2) Home Economics in social work.
(3) Domestic service.
(4) Home Economics for the housewife.
(5) Home Economics in higher education.
(6) Sewing and associated handicrafts.
(7) Study of dietaries.
(8) Rural schools.
(9) Institutional management.

The conferences will be completely free to elect their own chairman and to plan the methods of any undertaking which they may devise. Other subjects for conferences may be added.

EDITORIALS

Conference on Household Administration.

In the rapid development of the past ten years Home Economics seems to have reached the stage where the need of specialization is felt. During the Boston meeting this was several times emphasized and a section devoted to study of problems of household administration and institutional management was suggested. These annual meetings are now on such broad lines that it becomes essential to reduce the experiments and experience of many workers to compact form for discussion.

The trustees of the Lake Placid Club cordially invite such a section to hold its first meeting at the club the latter part of June and offer club facilities for the study of such problems as they may serve to illustrate. A week spent together where discussion and comparison can go on quietly, without the distractions and confusion of city life with its divided interests, should count much for progress. There were only seven, outside of club residents, who came together to organize the Lake Placid conference on Home Economics in 1899, but results seem to have justified the effort.

Those who would like to coöperate in this work are asked to write direct to the editor of this department (Mrs. Melvil Dewey, Lake Placid Club, Essex Co., N. Y.) suggesting subjects of immediate interest for discussion at this first meeting. It may be wiser to concentrate on a few lines of work at present without attempting to cover the broad field. Programs will be mailed to all who send addresses.

Branch Association Meetings.

An interesting development in the Home Economics field is the large number of association meetings in many states of the Union. Some of these are held in connection with an organized body, such as a state teachers' association. Sometimes, again, it is a meeting at a university in combination with some woman's club. Reports of a few of these gatherings are given elsewhere in this issue, but the *Journal* would like to publish a full list of such meetings. It is therefore earnestly requested that reports be sent to the Editor of the Education Section, 525 West 120th Street, New York City.

Methods of Teaching Home Economics.

Papers now in preparation for the October number of the *Journal* on methods of teaching in domestic art will mark the beginning of a series of articles on methods of teaching in the different departments of Home Economics. If they prove helpful and arouse discussion, this form of presenting the subject will be continued in future numbers. The topic is one of vital interest to a large number of the readers of the *Journal*. The editor of the education section would welcome questions and reports of experiences, for we need an exchange of opinion in regard to practical details of method and classroom management and suggestions from many sources. Exact uniformity in the teaching of this subject is not desirable and would certainly be impossible in a country where conditions are so varied; but open discussion offers one method of raising the standard of teaching. We need to see how the best pedagogical principles may be applied to the various household topics, each topic and each lesson being made the subject of careful study.

We are not claiming too much when we say that Home Economics is now an assured subject in the educational world. The struggle for recognition is over; but this is no time for us to rest upon any laurels that we have seemed to win. We now need to work on the development of courses of study which shall be effectively related to the curricula of the public school, the vocational and industrial school, and the college. Above all we need to appreciate the necessity for the careful management of recitation and laboratory work.

It has been said by more than one educator that the household arts are among the most poorly taught subjects in the school. This criticism must not be accepted or rejected without thought. The subject has now for a few years been so prominently before the public that its defects of necessity stand out, while those of other subjects are for the time partially forgotten. The youngest of the group has been, moreover, the first to receive the brunt of discussion which has resulted from the development of new pedagogical ideas that will in time affect the teaching of all branches in the curriculum.

We must also admit that the standard of teaching in these branches has doubtless suffered in the last few years from the fact that the call for instruction in all classes of schools has increased so rapidly that the supply of well-trained teachers has been wholly inadequate. Many teachers have thus been thrown on their own initiative in new fields who but for this pressure would have had longer discipline and experi-

ence in normal or graduate work before attempting to fill independent positions. For the same reason there has been too little opportunity for a strict grading of instruction. The lines have not been clearly drawn between elementary, secondary and collegiate courses.

In meeting these difficulties the teachers of Home Economics have done some of the noblest pioneer work anywhere on record, and the same spirit will enable them to meet the demands of the future.

What are some of the fundamental facts that we need to appreciate in order to raise the level of teaching? Teachers often fail to recognize that they are dealing with a body of ideas, so many in number and so vital that there is an embarrassment of riches. We are in danger of losing ourselves in the practical detail. It seems more difficult in the field of home work to realize the vital relation between theory and practice than in any other industry or occupation. In agriculture, an occupation most closely allied to home work, it is already well known that no field work can produce permanently satisfactory results unless it is based on sound and well tested-science. It is the function of teachers of household arts so to use theory in connection with practice that they can convince the world at large that this connection is a necessity. Surely there is no group of teachers with a greater opportunity than is offered to the teachers of Home Economics to organize scientific, ethical and economic principles in such a way that they will bear directly upon actual work, first in the classroom and then in the home.

Domestic Art.

The editors of the *Journal* have been very desirous of presenting articles on domestic art, but so far there has been difficulty in obtaining suitable material. As noted above, a study of methods of teaching in this branch will appear in the October number and we hope that it will be the beginning of helpful discussion of the subject in our pages. But what is, perhaps, more needed is to increase our body of knowledge on all domestic art subjects.

The scientific journals contain a large amount of material on domestic art topics such as the studies of the composition of silk by Abderhalden and his associates, which are being published in *Zeitschrift für Physiologische Chemie*. Many of the chemical and technical journals contain articles on dyeing, and material is published from time to time comparable with the note which is to appear in the *Journal* on the use of diastase for removing starch from clothing sent to the laundry, a

method which presumably entails less wear and tear on starched goods than the usual methods. It would be well worth while for some of the teachers of domestic art to endeavor to collect from the journals of recent years and other similar sources of information the data applicable to domestic art topics, so that the fund of knowledge available to teachers may be comparable with that which pertains to the composition of foods and other topics related to domestic science. Students might also be encouraged to take domestic art subjects for thesis work, and it should be possible to select topics which are capable of scientific treatment. Miss Crook's work on testing textiles affords an illustration of what can be done. For instance, it is said that a great deal of difficulty is experienced in dyeing raffia evenly, one surface taking the color much better than the other. Why could not some student study the problem and determine whether this is due to the different structure of the cells on the two surfaces of the raffia? The two surfaces of grass blades differ materially in this respect and if the surfaces of raffia cells should be found to differ, it is natural that their power of absorbing and holding dyes should vary correspondingly.

The protective power of clothing as affected by its material and color is another very interesting subject and an excellent piece of work could be done by a student or teacher who would go through a set of that mine of information, the *Archiv für Hygiene*, in order to collect and digest the articles on that subject.

A Summer Dairy School.

Those interested in the Milk and Baby Hygiene movement and those who believe in dairy farming as an occupation for women as well as those who are leading in one of the greatest sanitary movements of the day will be glad to learn of a summer dairy school to be held from June 7–July 19. For particulars, address Mrs. C. B. Ware, Norfolk, Mass. The Warelands Dairy also offers for the week of July 25 to August 1 a conference on agriculture for women.

Back numbers wanted.

Back numbers of JOURNAL OF HOME ECONOMICS wanted, February, April and June Numbers of 1909 and February, 1910.

The unusual demand from new subscribers for the complete file of our JOURNAL has depleted our stock and we need a few hundred copies of each of the numbers mentioned above. Any member of the Association sending us copies will be credited for the full face value of same on their subscription account for the coming year, or paid in cash.

Be sure to place your *name and address* on the outside wrapper, so that the numbers can be identified and credit given to the proper person.

Mail to the Williams & Wilkins Co., 2427–29 York Road, Baltimore, Maryland.

To those who have not paid dues.

The Editors of the JOURNAL would call the especial attention of members who have not paid dues for 1910 to bills that will be found enclosed in their copy of this issue of the JOURNAL.

The first bill for the current year was sent out in March and the number of those responding to it has not been as large as we could wish. We believe that in most cases the omission to pay dues comes from inattention or forgetfulness, and that this appeal will meet with a ready response. Even in cases where the JOURNAL has failed to meet the needs of the subscribers, we feel that, having accepted three numbers, they can hardly in good faith refuse to meet the implied obligation to pay for it.

It has been suggested that there may be some misunderstanding as to the limits of the year. The JOURNAL issues five numbers, February, April, June, October and December, and all subscriptions are for the calendar year. A member writes "I paid $2.00 last August, and yet you sent me a bill." This $2.00 was for the year 1909, and we should like to think that our correspondent feels that she has had her money's worth in the five numbers of that year and wishes to continue to receive the same help. The editors are most desirous that the members of the Association shall look upon the JOURNAL as something that they own and conduct in the interest of a cause which we all hold to be of vital importance in our modern education and daily life, and that the majority of them do so regard it is evidenced in the cordial and helpful correspondence that comes to the office. But perhaps it is not as easy to grasp the fact that in starting such a journal we have assumed financial responsibilities that must be met from month to month. Our only income is from our dues of $2.00 a year, which must also pay the expenses of the annual meeting and we hope that all interested readers will help to enlarge our list of members. Send to the editors lists of names to which we can mail a folder describing the aims of the association, see that the teachers of Home Economics in your community know of the publication and the help that it offers, ask that it be placed in your public and other libraries and tell your

friends that it is there that they may call for it. Bring it to the attention of women's clubs, intelligent housekeepers, social workers and all those interested in a higher standard of daily life.

The editors have far-reaching plans for enlarging the usefulness of the JOURNAL and they should not be hampered by a small or uncertain income.

Addresses of Members.

We wish to call special attention of members to the necessity of sending prompt notice of change of address. It should be remembered that second-class mail matter is not forwarded by the post-offices unless postage is furnished.

Advance Notice.

For lack of space we were unable to print in the June number a valuable article by Flora Hartley Greene, her thesis presented to the College of Agriculture of the University of Missouri in partial fulfillment of the requirements for the degree of Master of Science, subject "On the Amount of Edible Meat in the Various Cuts from Animals of Known Life Histories." This thesis will appear in our October issue, but as announcements of original work cannot with fairness to the investigator be delayed, we wish to call attention in advance to this article and to quote part of the results based on a large number of experiments in which the waste of bone and fat and of water through evaporation by cooking is carefully considered.

Although data have been previously reported as to some of these points, the investigation is believed to be of special interest because of the unusual opportunities afforded the author to learn the conditions under which the beef was produced, records being available as to the previous history of each animal and the food which it consumed. The data are summarized below:

Percentage of Edible Meat in Various Cuts of Beef.

	PER CENT OF EDIBLE MEAT.	COST OF EDIBLE MEAT PER POUND.	BUTCHER'S PRICE PER POUND.
Beef Loaf	72.9	20.6 cents	15 cents
Braised Round	61.47	24.4 "	15 "
Broiled Rib Ends	36.5	27.5 "	10 "
Rib Roast	41.6	37.5 "	15 "
Porter House Roast	41.2	61.1 "	25 "
Porter House Steak	42.2	63.3 "	25 "

ANNOUNCEMENTS.

GRADUATE SCHOOL OF HOME ECONOMICS

Arrangements are in progress to hold the third session of the Graduate School at the Iowa State College of Agriculture and Mechanic Arts, Ames, Iowa, July 6–20. This will afford opportunity to members to avail themselves of many of the advantages of the fourth session of the Graduate School of Agriculture, which will be held at the college, July 4–29.

Among the courses tentatively announced for the Graduate School of Agriculture during the sessions of the Graduate School of Home Economics may be mentioned as of special interest those on sociology, by President K. L. Butterfield of the Massachusetts Agricultural College; on economics by Dr. H. C. Taylor of the University of Wisconsin and Dr. B. H. Hibbard of the Iowa State College; on farm buildings by F. H. King; on factors influencing the keeping qualities of butter and milk, by L. A. Rogers and S. H. Ayers of the Dairy Division of the U. S. Department of Agriculture; on landscape architecture, by Prof. J. S. Pray of Harvard University; and on plant physiology by Dr. E. von Tschermak, professor of Plant Breeding in the Royal Agricultural College of Austria. There is also planned a round-table conference on agricultural journalism for July 9; excursions to typical Iowa farms, July 16; a discussion on the evening of July 13 of university extension in general, led by Prof. L. E. Reber of the University of Wisconsin and President Edwin E. Sparks of the Pennsylvania State College; and an address on the evening of July 15 on the status of agricultural extension at home and abroad, by Prof. John Hamilton, farmers' institute specialist of the U. S. Department of Agriculture.

The special program of the Graduate School of Home Economics has not yet been fully decided upon. In connection with it, one course has been suggested by Miss Caroline L. Hunt to be called The Scientific Basis of Progressive Legislation Affecting the Welfare of the Home, and to include not more than one lecture a day during the session.

This course is suggested by the fact that in the various legislatures and city council laws and ordinances are being introduced with the purpose of improving the conditions which affect home life. In support of such legislation arguments are being made which are based on scientific data, and it frequently becomes very desirable for those interested to know how far these data can be relied upon. For example, ordinances providing for the proper care of streets are being urged on the ground that diseases are transmitted by dust. Changes in the methods of disposing of household waste and stable refuse are urged upon the belief that flies carry disease. Building regulations are demanded on the ground that sunlight and fresh air are necessary to physical vigor. The demand for laws limiting hours of labor in factories is often based on physiological and chemical studies of fatigue, and on the belief that if labor continues too long reactions become slow and there is special danger of injury by machinery. This may be considered a home problem if for no other reason than that it affects the working power of the bread winners of families. In the case of women it is urged that overwork will affect disastrously the physical stamina of the next generation.

Those who are interested in such legislation and regulations must understand the scientific basis upon which they rest if they are to advocate them intelligently. They must know what work has been done which proves the necessity for legislation, what work remains to be done if the plea is to be based on other than general and sentimental arguments, and what reported work is unreliable. It is very desirable that students of Home Economics should be able to possess such knowledge.

Only a beginning is contemplated this year. Miss Hunt is to give one or two general introductory lectures, and Dr. C. F. Langworthy is to report on the literature of the physiology and chemistry of fatigue, and to discuss the possibilities of the respiration calorimeter as a means of furnishing scientific data in this connection. Other addresses are being arranged for.

It is intended to restrict the course very closely, excluding unrelated material and confining scientific work to that bearing directly on legislation which is at present being generally advocated, and to legislation which will be recognized by all as affecting home life.

Other courses are also contemplated. Those interested should communicate with Miss Edna D. Day, University of Missouri, Columbia, Mo., who is chairman of the committee of arrangements.

AMERICAN HOME ECONOMICS ASSOCIATION.

Sectional Meeting in conjunction with the National Education Association, for the Discussion of Methods of Teaching in Elementary and Secondary Schools. Headquarters: Margaret Cheney Memorial Room, Massachusetts Institute of Technology, 30 Trinity Place, Boston, Mass. Mrs. E. H. Richards, Chairman.

Preliminary Program.

First Meeting: Tuesday, July 5, 2 p.m. Miss Helen Kinne, Chairman.

Topic for discussion: Presentation of Subject Matter in Household Science and Arts to Elementary Pupils.

Second Meeting: Wednesday, July 6, 2.30 p.m.

Topic for discussion: Methods of Teaching Household Science in Secondary Schools.

The speakers are to be announced later. Many prominent persons are expected to take part. Information regarding accommodations may be obtained in advance by writing to Mrs. E. H. Richards, Massachusetts Institute of Technology, Boston, Mass.

CONFERENCE ON INSTITUTIONAL MANAGEMENT.

A sectional conference of the American Home Economics Association will be held at the Lake Placid Club, Lake Placid, New York, June 27 to July 2, 1910. Members of the association who are engaged in household and institutional administration, or in related teaching work, are cordially invited by the trustees of the Lake Placid Club to attend the conference. Persons engaged in the management of college and school dormitories, dining room and school lunch rooms, and in scientific and educational work directly related to such undertakings, are especially invited.

The following provisional program is announced, and a detailed program will be mailed to members of the association early in June.

1. The Expanding Field of Household Administration, its divisions of professional service and the training in preparation for each. Nomenclature. Function of each position, for example; Dietitian, Superintending housekeeper or matron, Purveyor.—Miss Adelaide Nutting of Teachers College and others.

2. House Planning for Institutional Households.

3. The Financial Management of Institutional Households: Systems of Accounts, including budgets, schedules and records.—Miss Katharine Sharp, Lake Placid Club.

4. The Organization of Labor in Institutional Households as regards Time and other Factors.—Miss Alice Patterson, Mt. Holyoke College, South Hadley, Mass.

5. Ideals in the Organization of the College Dormitory.—Miss Dora Eaton, University of Ohio.

6. Qualifications and Training of the Director of the College Dormitory.—Miss Lydia Southard, Whittier Hall, Teachers College.

7. The College Dormitory as a Teaching Field.—Miss Mary Urie Watson, Macdonald Institute, Guelph, Ontario.

8. The Buyer or Purveyor for the Institutional Household.—Mrs. Miriam Loomis, Laselle Seminary, Auburndale, Mass.

9. The Institutional Kitchen and Dining Room: Its arrangement, equipment and service.—Mrs. Melvil Dewey, Lake Placid Club. Miss Florence Corbett, Teachers College.

10. Dietetics and Dining Room Management.—Miss Emma Smedley, William Penn High School, Philadelphia, Pa. Dr. C. F. Langworthy, U. S. Dept. of Agriculture, Washington, D. C.

11. Trained Workers in Institutional Kitchens.—Miss Colburn, Chicago.

12. Training for Supervision of Institutional Laundries.—Miss Clara D. Noyes, St. Luke's Hospital, New Bedford, Mass.

The trustees of the Lake Placid Club through the President and Vice-President, Mr. and Mrs. Melvil Dewey, extend an invitation to all who attend the conference to accept the hospitality of the Club. Rooms will be furnished without expense to the delegates, and the charge for table board is $2.50 a day.

It is hoped that special rate railroad tickets can be secured. If not, mileage can be used and unused tickets will be redeemed by the Club. Delegates are invited to arrive at the Club on Monday night, June 27, so that the conference can begin promptly on Tuesday morning. Those who can do so are invited to remain over Sunday, July 3. As mentioned elsewhere the Boston conference on Home Economics education in connection with the National Education Association takes place on July 5 and 6. Delegates can thus go immediately from Lake Placid to Boston and attend both conventions.

Persons desiring to attend the conference should address at once, Home Economics, Lake Placid Club, Essex County, New York.

NEWS FROM INSTITUTIONS.

Rockford College.

Mrs. Mary D. Chambers, director of Home Economics, writes as follows: "Our senior students in Home Economics are now in the midst of the great work of the term—the practice teaching. Part of this is done in the cooking centers of the Rockford (Ills.) public schools, part in the college, with classes of college sudents. While each girl in turn conducts a laboratory period the rest of the class sit around with notebooks and pencils, and armed with their very keenest critical faculties. The result is evident during the discussions that follow, which are the liveliest we have; and where, up to the present, every "practice-teacher" has shown herself worthy of a medal for "coolness under fire."

Our beginning class think they are making bavaroises, charlottes, and diplomatic puddings. But the day of reckoning is at hand, when they are to see that all these dainties were merely vehicles for the truths concerning the reaction of commercial gelatine to water, heat and acids.

"All of us, seniors, juniors and teachers, are formulating arguments for the truth that is in us, viz: why some phase of this subject should form a part of the curriculum of all schools—on the basis of its economic, sociological and cultural value."

Massachusetts Agricultural College.

At the second annual farmer's meeting held in February, Home Economics courses were offered by the college for the first time in its history. Among the speakers were Mrs. E. H. Richards, Miss Anna Barrows, Miss Isabel Bevier, and Miss Helen Louise Johnson. The courses were well attended and with the increasing interest now being widely manifested in the state in all forms of extension work should be productive of much benefit.

The summer school to be held from July 11 to August 12 includes three courses in domestic science, under the direction of Miss Harriet Rinaker of the University of Illinois.

New York State College of Agriculture, Cornell University.

A home maker's conference was held in connection with Farmers' Week, February 7–12. Some of the subjects treated were house furnishing, home nursing, the amenities in home life, a demonstration of approved cooking appliances, household conveniences, household expenditures, dwelling house score cards, Home Economics at Cornell University, past, present and future, building materials, elements of house planning, physical attitudes in housework, emergencies and the family income.

A bill has passed the state legislature appropriating $154,000 for the construction of a Home Economics building.

Mechanics Institute Rochester, N. Y.

Beginning with September, 1910, the present two years' normal course in domestic science and art will be extended to three years. This change is being made to meet the growing demand for more broadly trained teachers of Home Economics.

For the first year and a half of the course the curriculum will be the same for all students, opportunity to specialize being offered during the remainder of the three years, with allowance made for an extra amount of observing and practice teaching during the senior year.

To meet the requirements of the new curriculum more laboratory space is needed and rooms in the Eastman Building will be equipped during the summer accordingly—an additional chemical laboratory for special work in foods and a larger biological laboratory and lecture room being the most important of the improvements.

Besides the teachers' course, Mechanics Institue offers a one year course in home making to young women who wish to supplement school or college training with practical study in Home Economics; also a one year course in lunch room management where women of maturer years may fit themselves for the new and lucrative field of directing cafeterias, factory or school lunch rooms, etc.

Pratt Institute Brooklyn, N. Y.

In consequence of the death of Mrs. Hattersley, director of the school of domestic arts, on January 15, and the resignation of Miss Edith Greer, director of the school of domestic science, which takes effect July 1, it has been deemed expedient to carry out the frequently discussed plan of consolidating these schools under one administration to be known as the School of Household Science and Arts. Miss Isabel Ely Lord, librarian of the Institute and a member of the general faculty for about six years, has accepted the directorship of the new school. The three types of work that have hitherto been carried on, viz: normal training, technical training for trades use, and technical training for home use, are to be continued and several short new courses for home-making and servants will be added. The schools have a combined enrollment at present of over 1500 students.

Pennsylvania State College.

The state federation of womans' club is raising a scholarship fund of $15,000' the income from which is to be given to students in Home Economics. It is expected that at least one student will be receiving the benefit of this fund by September, 1910.

Miss Sara C. Lovejoy, dean of the department of Home Economics, has been continuing the extension work begun by the department two years ago, and has traveled extensively throughout the state presenting the subject. The department has added to its equipment this year a new laboratory for work in chemistry of foods and of nutrition under the direction of Miss Elizabeth B. Bower.

Agricultural College of Utah.

Miss Ellen A. Huntington, director of the department of domestic science and art has kindly sent a program of the housekeeper's conference held at the college Jan. 24–Feb. 5. This conference is believed to be unique in its combination of practical instruction in the laboratory in connection with the public lectures. The program of the conference states the aim as follows:

"The housekeeper's conference is designed to aid the women of the state in their household needs. Practical instruction in cooking, sewing and sanitation will be given in the new and completely equipped laboratory of the woman's building, and ample opportunity will be offered for discussion of individual problems.

"A public lecture on topics of general interest will be given each afternoon by the president and members of the agricultural college faculty, and well-known lecturers. In connection with the conference an exhibition on "flies" will be shown. The various departments of the college have coöperated in arranging this exhibit, which is of universal interest. The dairying, poultry and horticultural meetings for farmers will be held at the same date and classes for women will be arranged.

"The general fee for the course is one dollar; and a slight additional fee to cover the cost of materials used is charged students who take the cooking course."

In the two weeks of the conference there were held eleven demonstration cooking lessons of the most simple and practical character; seven lessons in sewing, covering the purchase, cutting, fitting and finishing of a dress; three lessons in house sanitation and eleven public lectures on practical topics, chief among which seems to figure agricultural life for women.

The woman's building of the college was also the scene of an afternoon, evening and morning meeting of the Western Branch of the American Home Economics Association, on February 4 and 5. The subjects for discussion were a course of study for the high schools of the state, domestic science for the schools of the state and housekeepers as consumers.

University of Vermont.

Miss Bertha M. Terrill, professor of Home Economics, has been obliged to give up part of her work on account of illness. Her course in the summer session will be carried on by Miss Adelaide Abell of the Technical High School, Providence, R. I.

Milwaukee-Downer College.

Miss Nellie Crooks, director of domestic arts, has been appointed director of Home Economics for the ensuing year. Miss Hanson, who has been the director of domestic science, leaves to pursue further study. Miss Crooks is also giving a course of lectures on textiles in the University of Wisconsin.

University of Wisconsin.

Another most interesting program for a women's course in Home Economics was carried out at the University of Wisconsin College of Agriculture, February 8 to 12. Among the subjects treated in lectures and demonstrations were the following: Value of ventilation in the prevention of disease, and in farm dwellings and rural schools; the house plan; house sanitation; physical development of the child; home decoration and furnishing; house drainage and sewage disposal for country homes; bacterial contamination of milk; insect pests in the house; adulteration of textiles and foods; and the preparation of food in many of its aspects. In addition to the regular instruction staff of the university, lectures and demonstrations were given by Miss Anna Barrows of Teachers College, Joseph E. Wing of *Breeders' Gazette*, President L. D. Harvey of Stout Institute, Menomonie, Wisconsin, and Miss Nellie Crooks of Milwaukee—Downer College.

Northfield Seminary, East Northfield, Mass.

The department of Household Economics of Northfield Seminary was organized twenty-two years ago by Miss Emily Huntington. It now has splendidly equipped quarters in the new Home Science Hall, and although there are four teachers many more students ask for the work each term than can be admitted. One term of cooking and one of sewing are required for graduation from any seminary course. Elective work is offered in dressmaking, millinery, basketry, embroidery, advanced cooking, and housekeeping.

The last mentioned is a professional course, lasting one and one-half years, and the instructors are striving to combine in it a good scientific foundation and much practical application. The house "from attic to cellar" is studied in regard to construction, furnishing and care. The study of food and dietetics is continued from the other courses, with the calculation and preparation of balanced dietaries, first for those in comfortable circumstances, then for limited means, and finally for the lowest possible cost.

The school nurse gives lectures on home nursing, the school buyer on buying, and special courses in household chemistry have been arranged. Laundry work is also taught.

As the work of caring for the nine dormitories and the preparation of food for the four hundred and fifty residents of the school is done as "domestic work" by the students, an unusual opportunity is offered for practical training and experience.

Stout Institute Menomonee, Wis.

A course of six lectures and demonstrations was given by Miss Anna Barrows during the week of February 14. The course was arranged especially for the students and teachers of the Institute, but was also open to the public on payment of a small fee.

New Bedford Mass., Industrial School.

The opening of this new school is awaited with great interest. Mr. Charles R. Allen, the principal, writes that he cannot give as yet any coherent material about the girl's work but sends an announcement of his evening classes. The school had on file about seven hundred and fifty applications for these courses which opened in March. The girls' courses are expected to be opened in September.

The evening courses included in general practical and systematic instruction in the principles of dressmaking and millinery, and are intended to help a student to learn how to make her own hats or clothing economically and well, or to give some preliminary training to a girl wishing to secure work as a dressmaker's or milliner's apprentice. These courses are open free of charge to any girl or woman over 14 years old, and are to be maintained for a period of at least ten weeks if the attendance is sufficient. Those who complete the course in a satisfactory manner will be entitled to a certificate.

NEWS FROM THE FIELD.

Home Economics Work in California.

Miss Etta P. Flagg, chairman of the domestic science section of the Los Angeles City and County Teachers' Institute reports the following list of California towns as having domestic science courses: Berkeley, Eureka, Fresno, Compton, Auburn, Oakland, Ontario, Oxnard, Pasadena, Pomona, Redlands, Riverside, Santa Barbara, San Bernardino, San Diego, Santa Monica, Los Angeles, Huntington Park, Sacramento, San Louis Obispo, Eldorado, Ventura, Watsonville, and Long Beach.

Miss Flagg also sends a report of the meeting of this section held at the Polytechnic High School, Los Angeles on Monday and Wednesday afternoons, December 20 and 22, 1909. On Monday afternoon the elementary school was discussed. Miss Mabel Morgan and Miss Mae McKinley discussed how domestic science work could be made more educational. Both contended that this could be accomplished by a more thorough study of the presentation of the lessons and by realizing more fully what a wealth of material was included in these reports. The value of more vocational training was considered by Mrs. Minnie Brennan, a domestic science teacher, Mr. Frank Bowelle, a city school principal, and Mr. Robert Lane, director of the newly started trade school. All were in favor of more work. The question, Should the Work in the Elementary Grades be Vocational was discussed by Miss Mary Murphy and Miss Belle Wallace, both city school principals, the former advocating it and the latter opposing it.

On Wednesday afternoon Miss Nelle Miller, from the Domestic Science Normal School in Santa Barbara, gave a forceful talk on Vocational Work in the Secondary Schools, in which she maintained that the cost of material, the time necessary, and the difficulty of disposing of the finished production made the question of more vocational work in the secondary schools most difficult of solution. She likewise thought that the trade school spirit should be most carefully eliminated from the vocational school. This paper was followed by a discussion by Miss Delp and Miss Grey, Los Angeles city domestic teachers, both of whom believed in more vocational work.

On December 23, the Pacific Coast Home Economics Association held its regular meeting in connection with the Southern California Teachers Association. Dr. T. W. McArthur of Los Angeles gave a most practical and helpful talk upon How May the Teacher Safeguard the Health of her Pupils. Mrs. Lulu Hilliker, supervisor of domestic sicence in Redlands read a comprehensive paper on The Domestic Science Normal Schools of the United States and Canada. Miss Huntington, of the Agricultural College of Utah, spoke of the domestic science work in that state. All of these meetings were well attended and much interest was shown.

Miss Clark of Oakland, Cal., writes: "The Home Economics teachers of California have two thriving organizations; their successful work shows in the rapidity in which the work is being extended in the state each year, and in the larger movement toward more industrial arts in the schools."

Home Economics for Women in Rural Maryland.

Women's Institutes are coming to be an established branch of the Department of Farmers' Institutes in many states. They vary greatly, however, in their methods and in the character of the work given. Too often in meetings for women, cooking is taught to the exclusion of all other branches of Home Economics, with the result that in the minds of the average woman, Home Economics has come to be synonymous with cooking and recipes. As the average woman on the farm is a pretty good cook, she often resents the idea of some one coming to teach her to cook, and the criticism is often heard, "I can make just as good bread as she did," or "Her cake is no better than mine." The principles of cooking are important, but not more so than the principles of nutrition or the questions of sanitation. The farmer has accepted the teachings of science in his work. He understands the importance of a well balanced ration for his dairy cows and is learning the necessity of sanitary stables. These principles applied to home will be of equal interest to the farmer's wife, and in many cases will open up new fields of thought for her.

With these ideas as a basis, special women's institutes are being held in Maryland this year. One day, with morning and afternoon sessions, is devoted at each place. There have been no lessons in cooking, but instead the subjects of the lectures have been Importance of Training for Home Making, Some of the Sciences that Help in the Daily Work of the Home, Household Bacteriology or Why and How We Clean, Nutrition, and lastly a talk in Organization. The aim has been principally to impress the importance and the scope of Home Economics. Where there was already in the community an organization, such as a Grange or Club, it was urged to strengthen itself by systematic study, the women applying themselves to the study of Home Economics. Where there was no orgaization, steps were taken to form one. Miss Emma S. Jacobs and Mrs. H. J. Patterson have been conducting this series of meetings and have found the women interested and responsive, and, to a certain extent, determined to have it taught in the public schools.—ELIZABETH H. PATTERSON.

Annual Meeting of the Greater New York Chapter.

The annual meeting of the Home Economics Association of Greater New York was held at the Hotel Brevoort in New York, January 15. A luncheon, at which were present seventy-nine members and their guests, preceded the business meetings. Miss Florence Willard presented her report as delegate to the Boston meeting of the American Home Economics Association. At the election of officers the following were chosen for 1910:

President, Helen Kinne, Teachers College; Vice-Presidents, Mary E. Williams, Supervisor Domestic Science, New York Public Schools and Mary Simkhowitch of Greenwich House ; Secretary-Treasurer, Mary Tough, 19 Clifton Place, Brooklyn; and member of the executive committee, Ruth Wheeler, of Brooklyn.

Miss Kinne introduced the speaker of the afternoon, Miss Edith Greer, whose subject was Home Economics in Europe. Miss Greer spoke of life as she saw it in Italy, Switzerland and Holland, these being the countries where most of her time was spent last year. She found much of reality and charm among these people and much, too, for us to make use of educationally. In Italy, the handiwork which is marvelous in technique, has in it the superb art of the country's earlier days; the art, as art, she found distinctly inferior to the handiwork, whereas in this country

there is general opinion that the reverse of this is true. After referring briefly to the work in Switzerland and Holland, the speaker concluded by expressing the hope that we might come to the performance of our work with ability to secure the beauty and finish of Italy, the definite execution of Switzerland and the immaculate cleanness of Holland.

Other speakers of the afternoon were Miss Isabel Bevier of the University of Illinois, and Miss Gwendolyn Stewart, who spoke of the work done in Kings College for Women in London, England, under the direction of Miss Alice Ravenhill, whose recent visit to this country made her well known to many members of the Association.

New York State Teachers Association.

At the annual meeting held at Teachers College, Columbia University, New York City, during the Christmas holidays, the New York State Industrial Art Association gave an afternoon to the discussion of vocational work for girls. Addresses were given on The training of Girls for the Industries, by Mrs. Mary Schenck Woolman, Professor of Domestic Art, Teachers College, and Director of the Manhattan Trade School for Girls, and on Household Arts and Science as Vocational Training for Girls, by Miss Helen Kinne, Professor of Domestic Science, Teachers College. On another afternoon Miss Martha Van Rensselaer of Cornell University, spoke on Vocational Work for Country Girls.

Home Economics in Ohio.

There occurred in Cleveland, February 11, an event most promising for the future of Home Economics in Ohio. This was a joint meeting of the domestic science and domestic art section of North Eastern Ohio Teachers' Association and of the domestic science and domestic art section of the Ohio Arts and Manual Training Association. Previous to the meeting, letters were sent to all teachers of these subjects in the State announcing the purpose of the meeting and the program.

A round-table session at the Central High School at ten o'clock a.m. opened the meeting. Addresses were given on:

Domestic Art: Its Content and Possibilities, by Miss Anna K. Flint, of Ohio State University; and Domestic Science, by Dr. Benjamin R. Andrews, of Teachers' College, Columbia University; and a discussion of the domestic science courses in Columbus, Toledo, Canton, and Cleveland, by Miss Faith R. Lanman, Miss Mathilda Campbell, Miss Edith Wise, and Mrs. Ada B. Williams, respectively.

A business session followed at which a general desire was expressed for the formation of a state organization of home economists. The Misses Campbell, Wardall, Colwell, and McKinley and Mrs. Williams were appointed a committee to present plans for the formation of such an organization and to outline roughly a constitution.

Luncheon was served at the Technical High School, where in the lunch room, 74 covers, each having a place card designed and made in the applied arts department of the school, were prepared for the guests. A class of high school girls who were having a course in planning, cooking and serving meals, served the luncheon in three courses. After-luncheon talks followed by Mr. Barker, Principal of the Technical High School, acting as toast master, Mr. Elson, Superintendent of Public Instruction, in a speech of welcome, and Dr. Andrews, who discussed the Boston meeting of the American Home Economics Association. The visitors then inspected

the building, especially the household arts departments, where there were exhibits of domestic art work from the public schools of Dayton, Akron and Cleveland.

At 3 o'clock p.m. the business session was resumed, and following a favorable report of the committee, an Ohio Chapter of the American Home Economics Association was organized. The following officers were elected: President, Miss Rachel H. Colwell, Lake Erie College; vice-president, Miss Mathilda Campbell, Toledo; secretary and treasurer, Mrs. Ada B. Williams, Cleveland; and Miss Mabel McKinley, Dayton, delegate to the National Association.

At 4 o'clock p.m. the Cleveland Domestic Science and Domestic Art Club received their visiting friends in the Benjamin Parlor of the Young Women's Christian Association.

Miss Frances E. Sale, Director of the Department of Household Arts of the Harrisonburg (Va.) Normal and Industrial School for Women, reports as follows:

Home Economics Work in Virginia.

Home Economics has been introduced, so far, into only a few of the Virginia schools. The people are beginning to realize its importance and are putting it into more schools each year, so that we hope in the near future to be able to report each school as teaching at least some phase of the subject. The interest of the people is being aroused and they are putting forth an effort to establish, at least, cooking and sewing in their schools.

All three of Virginia's Normal Schools have the department of household arts. Farmville, which is the oldest, has had it three years, but succeeded only this year in getting the cooking laboratory equipped. Fredericksburg hopes to open its Normal School in the near future and this department will probably play an important role there. Domestic science has been taught several years in the schools at Staunton, Richmond, Lnychburg, Norfolk, and perhaps in a few other towns. There are always summer schools, too, in which this subject receives its share of attention.

At Harrisonburg Normal and Industrial School for Women, which began its first session in September, 1909, the department of household arts is offering at present a course which covers two years. The general aim is to teach the art of right living, through the elevation of the ideals of the home and through the application of scientific principles to the management and work of the household.

During the first quarter, or twelve weeks an elementary course was given in sewing, covering four periods (forty-five minutes each) per week. This was so popular that three sections had to be formed, and more sewing machines provided. A small exhibit of the work was given at the close of the quarter, which was very gratifying to the school authorities. According to the wish of a number of the students, the course has been continued through the second quarter. The sewing room is a very large, well-lighted room and is supplied with machines, electric iron, tables, desks, mirrors, lockers, etc.

A course in Home Economics was also given which included two periods a week. This course is being followed by one in home cleaning and laundry the second quarter, and home nursing the third quarter, thereby completing the year's work. In January, the work in cookery was begun. The rooms, two in number, are on the top floor of the Science Hall. They are light, well-ventilated rooms, and like nearly every room in the Hall, afford excellent views of the surrounding valley and mountains. One a large, oblong room is fitted up for the laboratory, and accommodates

twenty-two students. The desks are fitted with individual gas-stoves and with drawers which contain the necessary utensils. A large, deep cabinet with glass doors extends almost across one end of the room. The smaller room is fitted up as a dining room, but also contains the coal-stove as there was no other place for it. A large screen which is being made in the manual arts class, will be used to screen the stove from the remainder of the room. The floor is of hard-wood, and the home cleaning class is studying the problem of the best method of treating it.

The gas used in the laboratory is generated at the school. A study of how it is generated and also how the building is heated and ventilated make interesting topics for the girls.

As this is the first course the girls have had in household arts, none of the work this year is advanced. They will have methods, observation and practice of teaching the second year. It is very probable that a course in cooking and sewing will be given in the summer school.

At a meeting of the State Teachers' Association at Richmond in November, a paper on household arts was read in the rural schools division. The object of the paper was to tell the teachers what is meant by household arts, and how it can be introduced into the rural schools of the state with little expense. A short sketch of what is included in domestic science, domestic art, Home Economics and home nursing was given, followed by a statement as to the importance of the subject and its real value to home makers, especially to the rural people. The last of the paper was devoted to what particular problems can be introduced into the schools with little cost, with a short discussion of the necessary equipment.

During this meeting the few household arts teachers of the state, who were fortunate enough to attend the convention, met and began what we hope to see become a state organization of the household arts teachers. A chairman was appointed and a request sent to the manual arts department of the association to be allowed recognition in the association as a group in its department. This request was granted and we hope to have a program next November at the annual meeting.

Domestic Science Instruction in Washington, D. C.

Domestic Science is part of the regular school work in the public schools of Washington, D.C. Work was begun in October, 1886, by two students who were graduated from the normal school the previous June and had studied all summer with Mrs. Anna L. Woodbury. One teacher was assigned to the high school and the other to the elementary schools in one section of the city. So many pupils desired to take the work that large classes had to be formed and every hour filled.

Two years later, a sufficient number of centers having been furnished, the work was made a regular part of the instruction given all girls in the seventh and eighth grades. Two years later the cooking, which was the only branch of domestic science then taught, was taken from the high school course of study, but in 1901, a manual training high school having been organized, a full high school course in domestic science was prepared and offered. In 1908 "special" schools were organized for those children who for various reasons it was deemed wise to separate from the regular classes. It was decided that a full line of industrial work with little academic work was best for the development of such children, so the equipment necessary to teach the various household occupations as well as many other industrial subjects was purchased.

Boys as well as girls are given work along these lines. Progress is being made, but it is slow.

As soon as sufficient appropriations can be secured it is desired to extend the work in the regular schools and to give in connection with the physiology and hygiene of the lower grades, such practical household hygiene as can be taught in a school room. There are in our schools a certain number of children who for various reasons will never advance beyond the sixth grade. These children should have some knowledge of housekeeping and for this purpose it is hoped some day to secure funds to rent and to furnish one or more small houses; then, having these children in small groups teach them how to keep house there. Work in the bed room, bathroom, sitting room, dining room, kitchen, laundry, cellar and yards, will furnish sufficient opportunity to teach sewing, cleaning, marketing, cooking, serving meals, keeping household accounts, running fires, gardening, etc. Such experience will help to form habits which will do much to improve the homes in certain parts of the city.

Some of this work is given simply with the idea of having the children learn to do things. Other work is to teach them the how and the why of keeping things clean. Still another line is for the purpose of teaching what and how to feed people. The high school work has for its purpose training for homemaking which requires ability to apply the principles of the art and the science already taught. Five centers are open at night to adults, and many mothers avail themselves of this opportunity to learn what food to provide for their families and how to prepare it. One teacher has, at night school, a class of graduate nurses to whom she is giving a course in dietetics; another has a class of social workers to whom she is giving work which will help them in their house to house instruction in the selection, the preparation and the serving of food.—EMMA S. JACOBS, *Director of Domestic Science.*

A New Field for Teachers of Domestic Art.

The Woman's Educational and Industrial Union, 264 Bolyston Street, Boston, is conducting a unique course in salesmanship. This is in charge of a trained teacher of domestic art, and is given in coöperation with the large department stores in Boston. The class is composed of thirty girls from these stores who attend the school daily except Monday for three months from 8:30 to 11:30 a.m. Mondays and afternoons they serve at their own shops. The managers of the stores pay these girls a wage of about $6 a week during this term of instruction, and find it to their advantage to do so, as girls who have had the course sell more goods and rise rapidly to good positions. The subjects are most practical. Simple work in textiles is given so that an understanding of materials is gained, how they are woven and the names, prices and widths of the common ones handled. The origin and growth of the fibers is also studied. Lessons in color and design are presented in a most fascinating way through the use of ribbons, chiffons and other materials. Business arithmetic and the filling out of sales slips, exchanges blanks, etc., forms another part of the work. Lectures are given once a week by a woman physician on personal hygiene, care of the body, feet, proper clothing, etc. Once a week during the three months' demonstration sales are conducted and the girls take notes on good and bad points of the sale. These are given with actual materials and in a comparative way so that there is every opportunity for the girls to see a poor and good approach to a customer, the proper courtesy, a pleasant manner of receiving goods to be exchanged and methods of meeting other conditions likely to arise in shop work.

This course has been very successful and others are beginning to develop in different cities. The coöperation of the shops seems to be the great essential feature. The union has taken this year a few pupils for normal work in this department of salesmanship.

Domestic Science Work in Idaho.

According to a recent communication from Miss Alba Bates of the Academy of Idaho, "Idaho is taking the lead in introducing domestic science and arts into rural schools. Our state normals are planning to make practical education a strong feature of the normal training course, President George H. Black of the Lewiston Normal is offering a course for the coming year in rural arts which includes that part of domestic science, domestic art, and manual training particularly adapted to such needs of the rural community as can be reached through the rural schools. For this work a new building has just been completed and will be supplied with the best possible equipment to bring about results which will mean much in the future of the rural school system of Idaho.

"The State Academy meets the need of those students, from rural communities and small towns so numerous in a new state, who do not have high school privileges.

"Rural high schools and centralized rural schools are being established throughout the state and in a very short time the course in agriculture and domestic science will be a strong feature of the work in these schools."

Library Classification of Household Administration.

The Dewey decimal classification, in general use among libraries, in its 1910 revised edition, gives the following outline for household administration:

647 Household organization and administration. Institutional management.

.1 Household accounts, finance, cost.
See also Bookkeeping 657.

.2 Manager, superintendent, housekeeper, steward, dietitian.
See also 640.8.

.3 Regular employees or assistants.
Uniforms. Employment bureaus.
For ethical consideration, see 173.8.
As part of Political Economy, see 331.

.32 Male help.

.33 Female help.

.34 Foreign help.
Orientals, negroes, etc. Races and nationalities.

.4 Indoor help.
Cook, butler, waitress, parlor maid, lady's maid, chambermaid, nurse, laundress, furnaceman, etc.
For housekeeper, steward, etc., see 697.2.

.5 Outdoor help.
Coachman, gardener, laborers.

.6 Occasional employees.
Emergency help, household register.

.7 Wages, hours, duties.

48 Sanitary precautions. Laundry. Cleaning (subdivisons follow).

Quarterly Bibliography of Home Economics.

The Home Economics Association of Greater New York is printing a bibliography of periodicals to be issued quarterly. The February bibliography is just out and covers such topics as Dietetics and Nutrition, Fermentation and Enzyms, Food, Sanitation, Textiles, and Houses and House Furnishings. Under Miscellaneous are articles on The Fly, Uses of Cotton Seed, Indian Blankets, Baskets and Bowls, Peat as a Fuel, etc. There are one hundred and fifty-three articles listed. The bibliography is in the hands of the committee on current literature, of which the chairman is Miss Ruth Wheeler, 305 Montgomery Street, West Pittston, Pa.

Single copies of the bibliography are sold for ten cents, or for the year the four copies may be had at twenty-five cents, payable in advance. Orders may be placed with Dr. B. R. Andrews, 525 West 120th Street, New York City.

Second International Congress of Alimentary Hygiene and of the Rational Feeding of Man.

This organization is to meet at Brussels, under the patronage of the Belgian Government, October 4–8. Its business will be conducted in seven sections, viz., biological physics and energetics; physiology and physiological chemistry; hygiene of nutrition, bacteriology and parisitology; composition, analysis and adulteration of foods and dairy products; potable waters; legislation, food inspection and control; and work of a popular character regarding rational feeding and alimentary hygiene. For the last section, which is of particular interest to Home Economics workers the following questions have been submitted for discussion:

1. The working man's food: What is it? Its price in large centers. What is its nutritive value?

2. International organization of fisheries as a means of obtaining food at low prices.

3. Is the preservation of meat by refrigeration advantageous? What is the best means of preserving meat? What is the best organization of slaughter houses?

4. Desirability of studying the changes of diet that certain classes of working men undergo when leaving one condition in one country for another, socially and physically (moving from the country to the towns; emigration from one country to another, etc.).

5. The classification of professions as regards outlay of energy; should it be revised especially as regards the working man? Food of working men not only in regard to expenditure of physical strength, but also in regard to their intellectual work.

6. Food law administration; coöperative societies of consumers; the food bakeries, restaurants, their conduct, their social importance; services rendered to hygiene. In what manner should the public authorities exercise control over the above institutions and in what cases should they be encouraged?

7. The teaching of alimentary hygiene and rational feeding in schools, and especially in large cities; the teaching of alimentary hygiene and rational feeding in other places than schools.

8. Food aid for children and old people.

The membership fee is twenty francs ($4), which may be paid to the American representative of the Congress, Dr. H. W. Wiley, Bureau of Chemistry, U. S. Department of Agriculture, Washington, D. C., from whom additional information may be obtained.

BOOKS AND LITERATURE.

Elementary Domestic Science: Food and Cookery. SARAH WINDLE LANDES. 1909. Pp. 149. Guthrie, Okla., Leader Printing Co. Price $0.50.

This handbook, which constitutes Part 1 of a school text-book on elementary domestic science, has been prepared chiefly to fit the needs of the upper elementary grades. One of its special aims is to correlate the subject of domestic science with the remainder of the curriculum, notably geography, agriculture and nature study, and history. It is divided into three sections, viz: Food, Cookery, and Elementary Chemical and Physical Experiments with Food Materials, and the arrangement is such that schools without equipment may use merely the first section, and those possessing chemical apparatus but no kitchen may take up sections 1 and 3. A large number of menus and recipes, a series of simple experiments, and a list of publications useful for reference, are included.

Housekeeping for Two. ALICE L. JAMES. New York and London: G. P. Putnam's Sons, 1909. Pp. vii+426.

Furnishing the home, laundry work, marketing, cleaning, care of furniture, social life, and similar questions are discussed in this volume, which is designed for those who are beginning housekeeping.

In some of the sections recipes are included and the volume is provided with an index.

Newer Methods of House Disinfection. G. SOBERNHEIM. *Arch. Volkswohlfahrt*, 2 (1909), no. 12, pp. 708–717, figs. 6; 3 (1909), no. 1, pp. 12–14.

A summary of data regarding methods of house disinfection. The introduction of formaldehyde, the author concludes, has marked a great advance in household disinfection.

Preserve Labels. MISSES CHENEY AND CARMICHAEL, Artcraft Shop, Auditorium Building, Minneapolis, Minn.

This is a booklet of 400 adhesive labels arranged in perforated sheets like stamps and bound in an artistic cover. There are perhaps twenty different labels ready for the canning season.

The Dust Nuisance and Ways of Lessening It. D. LAYRIZ. Die Staubplage und ihre Bekämpfung. Munich, 1908; rev. in *Arch. Volkswohlfahrt*, 2 (1909), no. 6, p. 396.

A summary of data on the street dust problem.

Hygienic Significance of Sulphur in Gas. F. E. GALLAGHER. *Jour. Indust. and Engin. Chem.*, 1 (1909), No. 9, pp. 656, 657.

According to this paper the So_2 contents of gas lighted rooms is wholly neglible as regards comfort or health. In a case where the air of the room changed 1.8 times per hour with doors and windows sealed, one man actively exercising had about the same effect as gas burning at the rate of five feet per hour.

The Influence of Muscular and Mental Work on Metabolism and the Efficiency of the Human Body as a Machine. FRANCIS G. BENEDICT and THORNE M. CARPENTER. U. S. Dept. Agriculture, Office of Experiment Stations, Bul. 208, 1909, pp. 100, figs. 3.

In this monograph the first 44 pages are devoted to a discussion and details of experiments on "muscular work and body efficiency." Experiments were made with a number of different individuals while riding a special form of bicycle ergometer inside the respiration calorimeter then at Wesleyan University. With a professional bicycle rider the mechanical efficiency of man was found to be about 21 per cent. The resting energy output of 92 calories per hour was raised during very severe work to over 600 calories per hour of which 112 calories were transformed into muscular work.

A study of "the influence of mental work on metabolism" was also made upon twenty-two men, who were taking the customary college mid-winter examination. The men spent three hours inside the respiration chamber, during which time the water vaporized, oxygen consumed and carbon dioxide and heat produced were carefully measured. Compared with control experiments on the same individuals, the authors found that mental effort has no positive influence on metabolic activity —VICTOR C. MYERS, M.D.

House Decoration. DOROTHY TUKE PRIESTMAN. Philadelphia. Pennsylvania Publishing Co., 1909, pp. 208. Illustrated.

The treatment of walls, the selection of furniture and floor coverings, the kitchen, the bathroom, home carpentry, and other related topics are taken up in this volume which as a whole is a useful handbook for the general reader.

Dorothy Brooke's School Days. FRANCES C. SPARHARK. Pp. 368. Price $1.50. Illustrations by F. T. Merrill. New York: Thomas Crowell and Company.

Any lively girl will enjoy this story of stirring episodes in boarding school life. The heroine is the kind of leader whose energies it is necessary to enlist to make any new departure succeed in a school. The reading of a story of this type might be helpful to many teachers of domestic science. Often special teachers are too engrossed in their subject sufficiently to consider the point of view of the student. —ANNA BARROWS

Town Planning and Modern Architecture at the Hampstead Garden Suburb. T. F. and R. UNWIN and M. H. B. SCOTT. London and Leipsic, 1909, pp. 98, pl. 1, figs. 121.

This volume contains detailed plans for the laying out of a city suburb in a convenient manner, in such a way as to insure light and air and preserve a park-like character.

Plans are given for a large number of houses and the volumes as a whole is a contribution to domestic architecture, house furnishing, and related questions.

Euthenics. Mrs. E. H. Richards.

Whitcomb and Barrows expect to publish in June Mrs. Richards' book on this subject. We quote a paragraph which will give a hint of its purpose:

Euthenics has been chosen to express man's power over his immediate environment. It is a gospel of hope, of courage. It disregards the foe in the distant valleys and sets us at work on our own door yards. . . . . We have come to the word which we must bind as a phylactery on our foreheads and as an amulet on our arms—"Responsibility." It is a longer word and suits the times. Our forefathers called it duty. We have forgotten the sound and the meaning of that word. Let us not revive it, but take the more expressive term of inter-relations, inter-actions, as more indicative of the time. Responsible we must be, if there is to be government, community life, race progress.

Household Arts Review. Teachers College, Columbia University, New York City.

The April number of this magazine, published three times a year by the Household Arts Club of Teachers College, contains some sixty pages of articles, many of them of distinct value to the student of Home Economics. Among the most important are the following: Industrial Education and Economic Evolution; The Social Services of the District Nurse; The Campaign for Clean Milk in New York City; The Teaching of Household Arts in Rural Schools; Household Science Course; Organization and Management of Dressmaking Establishments by College Women; Housewifery as a Branch of Sanitation; A Visit to the Public School on Barren Island.—B. R. Andrews.

Canadian Government Annuities, Comfort and Happiness in Old Age. S. T. Bastedo, Superintendent, Ottawa, Ontario, pp. 30.

This pamphlet outlines a system of annuities administered by the Canadian Government which forms a sane and commendable attempt to provide universal insurance for old age. The Home Economics movement must undertake an educational propaganda for thrift and the financial independence of the individual family, and this Canadian booklet is a welcome addition to our scanty literature on the subject.

A BIBLIOGRAPHY OF SCHOOL LUNCHES

Nutrition Processes During the Growth of the Child. M. Rubner. (*Arch. Hyg.* 66 (1908), Nos. 1–2, p. 81.)

Dietary Studies in Orphan Asylums. Emma Smedley, R. D. Milner, H. L. Knight and C. F. Langworthy. In "Dietary Studies in Public Institutions." (*U. S. Dept. Agr. Office Experiment Stas. Bull.* 223.)

Applied Domestic Science, Daily Meals for the School Year, and a Dietary Study for October. (Institute for Colored Youth (Teachers' Training School) Cheyney, Pa., 1909, pp. 48.)

The Feeding of Infants and Children in Health. G. A. Sutherland in "A System of Diet and Dietetics," London (1908), pp. 743–799.

Diet and the Diseases of Children, G. A. Sutherland in "A System of Diet and Dietetics," London (1908), pp. 803-850.

Der Stoffwechsel des Kindes von der Geburt bis zur Beendigung des Wachstums. Tubingen, 1896.

Die Verdauungsarbeit, ihre Grosse und ihr Einfluss auf den Stoffwechsel, insbes, den Stoffwechsel des Säuglings. 1900. Reprinted from *Jahrb. Kinderheilk.*, n. ser. 51 (1900), p. 26.

Zur Physiologie des Säuglingsalters. Berlin, 1902. Reprinted from *Jahrb. Kinderheilk.*, n. ser., 56 (1902), p. 543.

Die körperliche Entwicklung, die Ernährung und Pflege des Kindes. Stuttgart. 1902.

School and Other Lunches. (*Phil. Press*, Oct. 12, 1909.) A commentary on the dietary work at the Teachers' Training School, and data regarding the appropriation of $3000 by the Philadelphia Board of Education to test in three schools the practicability of furnishing three-cent luncheons.

The School Lunch-Room. Maude Parsons. (*Illinois Farmers' Inst. Bul.* 14, pp. 140). Also data regarding the school lunch work in Rockford, Ill. school luncheons. (*Survey*, 23 (1909), No. 11, pp. 350, 351).

Penny Luncheons. Alice C. Boughton. (*Psych. Clin.* 3 (1910), No. 8, pp. 228–231, fig. 1.)

Home Science at Bozeman. (*Dakota Farmer*, 30 (1910), No. 1, pp. 49, 50, figs. 7.) Contains data on lunches prepared for sale as part of the Home Economics work.

The School Child's Breakfast, W. C. Hollopeter. (*Jour. Amer. Med. Assoc.*, 53 (1909), No. 21, pp. 1727–1730.)

Penny Lunches. H. H. Bonnell, (*Starr Centre Soc.* [*Rpt.*] 1909, pp. 18–20, fig. 1.)

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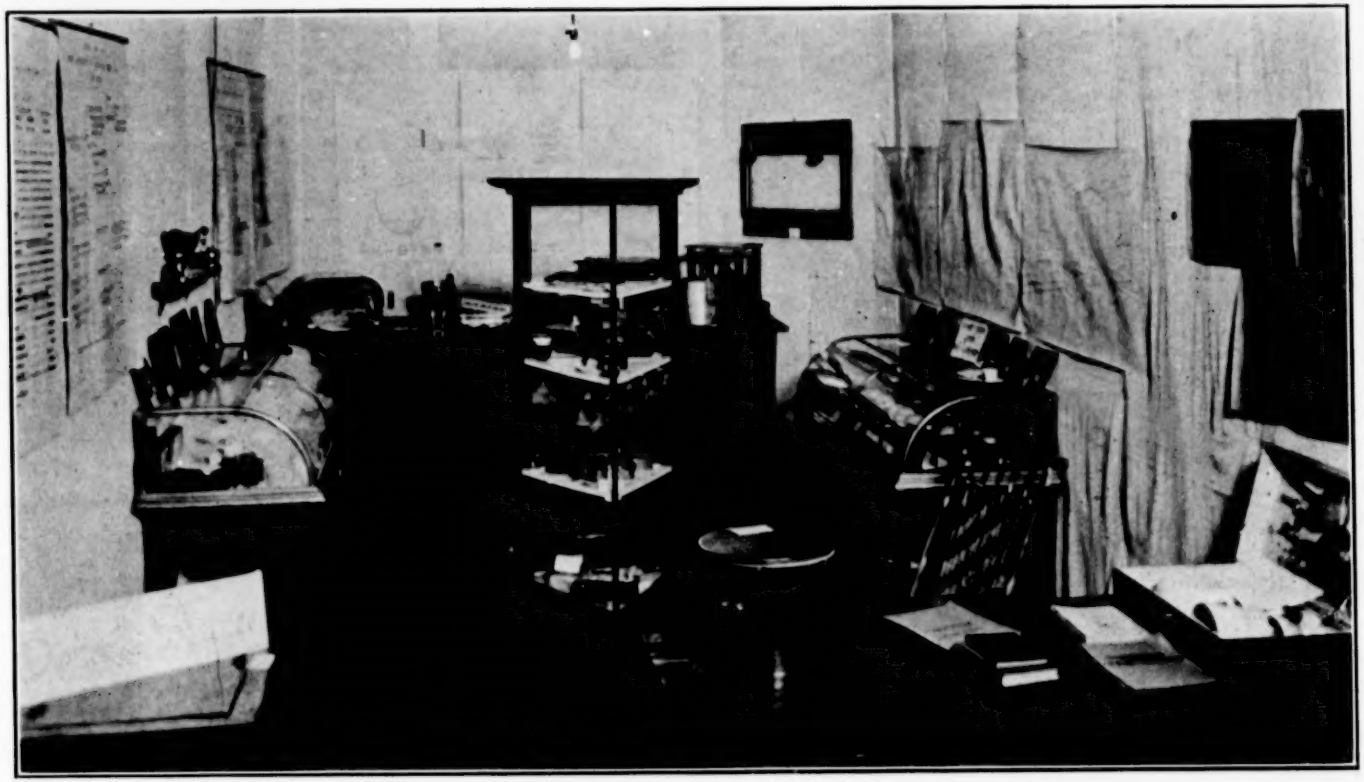
TABLE OF CONTENTS

OCTOBER, 1910

Report of the Boston Meeting of the Educational Section of the Association 349
Domestic Art as Discussed at a Recent Meeting of the Household Arts Section of the National Education Association, Anna M. Cooley 354
Suggestions for Teaching Drafting in the First or Second Year of the High School, Ruth A. Wilmot 359
A Lesson in Dressmaking, Annie L. Bennett 361
The Teaching of Millinery, Clara S. Gay 363
Teaching Design to Trade Classes, Grace W. Ripley 366
Practical Methods in a Household Arts Lesson, Emma S. Jacobs 369
Domestic Art: Its Content and Possibilities, Anna K. Flint 373
How to Make the Household Arts Effective in the School and Community, Ednah A. Rich 377
The Teaching of Methods of Housewifery in Secondary Schools, S. Maria Elliott 379
The "House Course," University High School, Chicago, Jenny H. Snow 384
The Teaching of Household Furnishing and Decoration, Mrs. Mary E. Williams 387
The Relation of Fine Art to Domestic Art, Elizabeth Stone 390
Physiology and Courses in Home Economics, P. G. Stiles 393
Chemistry for Students of Home Economics, James F. Norris 397
Courses in Home Economics as Related to the Department of Agriculture Work, Juanita L. Shepperd 403
The Amount of Edible Meat in the Various Cuts, Flora Hartley Greene 413
Third Graduate School of Home Economics 425
Sectional Conference on Household and Institutional Management 429
Home Economics at the General Federation of Women's Clubs 431
Editorials 432
News from Institutions 435
Notes from the Field 447
Books and Literature 449
Index to Volume I 455



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